Lutron®

integration protocol

revision N 9 August 2013

LUTRON®

Revision Update — N

NOTE: New to this release

The following updates have been made to the Lutron® Integration Protocol

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  - – SYSTEM Command 18
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Integration Operations

The Lutron® integration protocol will allow third-party equipment, such as touch-screens, universal remote controls and software applications, to control and monitor devices in a Lutron® lighting control system. The protocol supports three basic types of integration operations:

- Execute an action in the Lutron® system
- Query the status of the Lutron® system and Lutron® devices
- Monitor responses from the Lutron® system

Operation Characters

To help create and manage the different integration operations, three distinct operation characters have been selected to begin each command. All protocol messages will start with one of the following operation characters:

- # Executes an action (e.g. turn a dimmer on/off)
- ? Query system information (e.g. determine on/off status of a dimmer)
- ~ Monitor responses from the system when requested or after a change has occurred (e.g. if someone turns on a dimmer locally a response command is sent out to indicate the change)

Note to Integrator: *Operation characters are not used in any other location in the protocol command string. Therefore, the driver can search for these characters to determine the start of a new command string.*

Command Types

Operation characters will be followed by command types. The two most common commands are: OUTPUT and DEVICE. Other command types are available; see the Integrator's Reference for a summary.

- OUTPUT allows control and monitoring of device outputs such as dimmers and contact closure outputs.
- DEVICE allows control and monitoring of device inputs such as button presses, releases, and contact closure inputs.

Command Structure

The protocol command structure is made up of three parts:

Command	Integration ID	Command-specific fields

1. The **Command** is made up of the operation character and the command type.
2. The **Integration ID** is assigned to each device in the system during system setup, providing a unique user-assigned address for each system device.
3. The **Command-specific fields** contain additional information relevant to the type of command. Details about what command-specific field data is supported can be found in the appropriate device specific section of this integration protocol guide.

Command Termination

Each command is made up of fields, separated by commas and terminated with a carriage return (ASCII dec 13/hex 0D) and a line feed (ASCII dec 10/hex 0A). Carriage return is shown as <CR> throughout this document and line feed is shown as <LF>.

Command Examples

1) This command sets a dimmer (1) level to 75% with a 1 minute and 30 second fade time.
***#OUTPUT,1,1,75,01:30*<CR><LF>**

Command	Integration ID	Command-specific fields		
		Action Number	Level	Fade Time
#OUTPUT	1	1	75	01:30

2) This command presses button number 1 of a keypad (2).
***#DEVICE,2,4,3*<CR><LF>**

Command	Integration ID	Command-specific fields	
		Component Number	Action Number
#DEVICE	2	4	3

3) This command requests the output level for a dimmer (3).
***?OUTPUT,3,1*<CR><LF>**

Command	Integration ID	Command-specific fields
		Action
?OUTPUT	3	1

4) When a user makes a change to a dimmer locally, the following command response would be sent out from the system or when requested by the command in Example 3 above. This command response example shows the local dimmer (3) level was changed to 90%.
***~OUTPUT,3,1,90.00*<CR><LF>**

Command	Integration ID	Command-specific fields	
		Action	Level
~OUTPUT	3	1	90.00

Integration Access Points

- Integration Access Points communicate with external systems using RS232, Ethernet or both. The Lutron® integration protocol will allow third-party equipment, such as touch-screens, keypads and software applications, to control and monitor devices in the Lutron® lighting control system through an Integration Access Point. For more information, check the page specific to the Integration Access Point being used. An example of an Integration Access Point is the QS Network Interface (QSE-CI-NWK-E). For a listing of all the available Integration Access Points supported by a particular system, see the Integration Access Points section for that system in the table of contents.

Command Rules and Formatting

- All commands are in ASCII characters
- Each command is made up of fields, separated by commas and terminated with a carriage return (<CR>, ASCII 13) and a new line (<LF>, ASCII 10)
- Letter case is ignored
- Spaces are ignored
- Leading zeros are ignored

Integrator's Reference
COMPATIBILITY MATRIX

Integration Access Point Compatibility Matrix:

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
QS Network Interface	✓	✓		✓	
RadioRA® 2 Main Repeater			✓		
HomeWorks® QS Processor				✓	
Clear Connect® Gateway					✓

Device Compatibility Matrix:

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
GRAFIK Eye® QS	✓	✓	✓	✓	
seeTouch® Keypads	✓	✓	✓	✓	✓
Tabletop seeTouch® Keypad			✓	✓	
Architrave™ Keypads	✓	✓		✓	
Signature Series™ Keypads	✓	✓		✓	
Sivoia® QS Shade	✓	✓	✓	✓	✓
Maestro® Dimmers + Switches			✓	✓	✓
Maestro® Fan Speed Control			✓	✓	
Visor Control Receiver			✓	✓	
Hybrid Keypad			✓	✓	
Pico® Wireless Controls	✓	✓	✓	✓	
Radio Powr Savr™ Sensor			✓	✓	✓
HVAC Controller			✓	✓	
Remote Power Module		✓		✓	
Energi Savr Node™ QS/DALI	✓	✓			
Energi Savr Node™ QS/Int'l 0-10V	✓	✓			
Energi Savr Node™ QS/ EcoSystem®	✓	✓			
Energi Savr Node™ QS/0-10V	✓	✓			
Energi Savr Node™ QS/ Int'l EcoSystem®	✓	✓		✓	
Energi Savr Node™ QS/ Int'l Motor Module				✓	
Wallbox Input Closure Interface	✓	✓		✓	
Wireless Temperature Sensor				✓	

Integrator's Reference *(continued)*

DEVICE: Command Summary

Device integration commands allow the user to access components of the system such as a physical device. The user can activate programming via button presses, releases, etc., as well as monitor those same events as they occur in real time in the system.

DEVICE Command Formats

Operation *Integration ID (example)*

#DEVICE, 5, Component Number, Action Number, Parameters

Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Refer to device specific tables for lists of Component Numbers.

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Press/Close/Occupied	3	None
Release/Open/Unoccupied	4	None
Hold[2]	5	None
Multi-tap[2]	6	None
Set or Get Current Scene[1,2]	7	Scene
Set (#) or Get (?) LED State	9	0=Off, 1=On 2=Normal Flash[2] 3=Rapid Flash[2]
Set or Get Light Level[3,4]	14	0–100 or 0.00–100.00
		SS.ss, SS, MM:SS, or HH:MM:SS
		SS.ss, SS, MM:SS, or HH:MM:SS

Action Numbers and Parameters are continued on next page...

Integrator's Reference *(continued)*

DEVICE: Command Summary *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Set or Get Zone Lock [1,2]	15	0 = Off 1 = On
Set or Get Scene Lock [1,2]	16	0 = Off 1 = On
Set or Get Sequence State [1,2]	17	0 = Off, 1 = Scenes 1–4 2 = Scenes 5–16
Start Raising [3,4]	18	None
Start Lowering [3,4]	19	None
Stop Raising/Lowering [3,4]	20	None
Get battery status	22	1 = Normal, 2 = Low
Set a custom lift and tilt level of venetian blinds programmed to the phantom button [3,5]	23	Lift level % Tilt level %
Set a custom lift level only of venetian blinds programmed to the phantom button [3,5]	24	Lift level %
Set a custom tilt level only of venetian blinds programmed to the phantom button [3,5]	25	Tilt level %
Hold/Release[2]	32	None

NOTES

1. Not supported in HomeWorks® QS.
2. Not supported in RadioRA® 2.
3. Use OUTPUT command with equivalent action number in RadioRA® 2.
4. Use OUTPUT command with equivalent action number in HomeWorks® QS.
5. Use SHADEGRP command with equivalent action number in HomeWorks® QS.

Integrator's Reference *(continued)*

DEVICE: Command Summary *(continued)*

HomeWorks® QS Button Types and Integration Requirements:

Refer to Lutron® Designer software for setting up programming options.

Programming Options				Required Integration Action Numbers				
Buttton Type	Double Tap	Hold	Cycle Dim	Press (3)	Release (4)	Multi-Tap (6)	Hold (5)	Hold Release (32)
Single-Action and Toggle Buttons	—	—	—	✓	—	—	—	—
	✓	—	—	✓	—	✓	—	—
	—	✓	—	—	✓	—	✓	—
	✓	✓	—	—	✓	✓	✓	—
	—	—	✓	✓	✓	—	✓	✓
	✓	—	✓	✓	✓	✓	✓	✓
Dual Action Buttons	—	—	—	✓	✓	—	—	—
	✓	—	—	✓	✓	✓	—	—
Master and Single Scene Raise/Lower Buttons	—	—	—	✓	✓	—	—	—
Open/Stop/Close/Stop Buttons	—	—	—	✓	—	—	—	—

RadioRA® 2 Button Types and Integration Requirements:

Refer to RadioRA® 2 Essentials/Inclusive software for setting up programming options.

Programming Options		Required Integration Action Numbers				
Buttton Type	Scene Save Enabled	Press (3)	Release (4)	Multi-Tap (6)	Hold (5)	Hold Release (32)
Single-Action and Toggle Buttons	—	✓	—	—	—	—
	✓	✓	—	—	✓	—
Master and Single Scene Raise/Lower Buttons	—	✓	✓	—	—	—
Shade Toggle Buttons	—	✓	—	—	—	—

Integrator's Reference *(continued)*

OUTPUT: Command Summary

Outputs are dimmers, CCOs, or other devices in a system that have a controllable output. All of these devices will accept levels from 0% to 100% and 0.00% to 100.00% with a given fade and delay time. These same commands can be monitored in real-time as they occur in the system.

OUTPUT Command Format

Operation *Integration ID (example)*

#OUTPUT, 6, Action Number, Parameters

Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Set or Get Zone Level	1	0–100 or 0.00–100.00
		SS.ss[2], SS, MM:SS, or HH:MM:SS
Start Raising	2	None
Start Lowering	3	None
Stop Raising/Lowering	4	None
Start Flash[3]	5	SS.ss[2], SS, MM:SS, or HH:MM:SS
Pulse	6	SS.ss[2], SS, MM:SS, or HH:MM:SS
Set (#) or Get (?)[4,8] Venetian tilt level only	9	Tilt Level[1] = 0–100 or 0.00–100.00[1] Fade[2] in: SS.ss[3], SS, MM:SS, or HH:MM:SS Delay[4] in: SS.ss[3], SS, MM:SS, or HH:MM:SS
Set (#) or Get (?)[8] Venetian lift & tilt level	10	Lift Level[1] = 0–100 or 0.00–100.00[1] Tilt Level[1] = 0–100 or 0.00–100.00[1] Fade[2] in: SS.ss[3], SS, MM:SS, or HH:MM:SS Delay[4] in: SS.ss[3], SS, MM:SS, or HH:MM:SS
Start raising Venetian tilt	11	None[8]
Start lowering Venetian tilt	12	None[8]
Stop Venetian tilt	13	None[8]
Start raising Venetian lift	14	None[8]
Start lowering Venetian lift	15	None[8]
Stop Venetian lift	16	None[8]
Set DMX color/level settings[5]	17	Color/level index: 0–255 0.00–100.00[6]

Continued on next page…

Integrator's Reference *(continued)*

OUTPUT: Command Summary *(continued)*

OUTPUT Command-specific fields *(continued)*

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Motor Jog Raise [5]	18	None [7]
Motor Jog Lower [5]	19	None [7]
Motor 4-Stage Jog Raise [5]	20	None [7]
Motor 4-Stage Jog Lower [5]	21	None [7]

NOTES

1. For switched outputs, any non-zero level results in on or closed, 0 results in off or open.
2. Fractions are rounded **up** to the closest ¼ second.
3. To stop a dimmer from flashing, send it to a valid level (action 1).
4. The Delay time is optional. When not used the system will use a zero second delay. The minimum delay time is 0 seconds. The maximum delay time is 4 hours.
5. Not supported in RadioRA® 2.
6. Supported in Quantum® version 2.2 and higher.
7. Supported in Quantum® version 2.5 and higher.
8. Not supported in Quantum®.

Integrator's Reference *(continued)*

GROUP: Command Summary

The GROUP command is used to report the status of a group of occupancy sensors.

GROUP Command Format

Operation *Integration ID (example)*

?GROUP, 6, Action Number

Command *Use "GROUP Command-specific fields" tables to complete these command fields.*

GROUP Command-specific fields

Occupancy States:

Description	Value
Occupied	3
Unoccupied	4
Unknown	255

Action Numbers:

Action	Action Number
Get (?) Occupancy Group State	3

Example GROUP Messages

Operation	Command String
Query: ?GROUP, Integration ID, Action Number	
What is Occ GROUP 1's status?	*?GROUP,1,3*<CR><LF>
Response: ~ GROUP, Integration ID, Action Number, Parameters	
Occ group 1 is occupied	*~GROUP,1,3,3*<CR><LF>
Occ group 1 is unknown	*~GROUP,1,3,255*<CR><LF>

Integrator's Reference *(continued)*

MONITORING: Command Summary

Monitoring allows the user to configure what types of messages the system will report.
Note to Integrator: *The default values of these are set in the programming database and restored whenever the integration port is logged in. The user can temporarily change those settings to hide or show information as desired.*

MONITORING Command Formats

Operation
#MONITORING, Monitoring Type, Action Number
Command *Use "MONITORING Command-specific fields" tables to complete these command fields.*

MONITORING Command-specific fields

Monitoring Type:

Description	Monitoring Type
Diagnostic Monitoring	1
Event Monitoring	2
Button Monitoring	3
LED Monitoring	4
Zone Monitoring	5
Scene #	8
Reply State (if disabled, all messages FROM the integration access point will cease)	11
Prompt State (if disabled, the prompt will not be printed to the terminal)	12
Sequence Monitoring	16
HVAC Monitoring	17[1]
Mode Monitoring	18[1]
Set (#) or Get (?) State of All Monitoring (except Reply and Prompt)	255

Action Numbers:

Action	Action Number
Enable	1
Disable	2

NOTES

1. Not compatible with Quantum®.

Integrator's Reference *(continued)*

ERROR: Command Summary

Integration Access Points will respond with an error if an invalid command is received. See the table below for explanations of different errors.

ERROR Command Formats

Operation
|
~ERROR, Error Number
|
Command *Refer to "ERROR Command-specific fields" table*

ERROR Command-specific fields

Error Numbers:

Description	Error Number
Parameter count mismatch	1
Object does not exist	2
Invalid action number	3
Parameter data out of range	4
Parameter data malformed	5
Unsupported Command	6

Example ERROR Messages

Operation	Command String
Parameter count mismatch: Too many or too few parameters for the specified action	
Too many parameters when activating scene	*#AREA,2,6,1,1,1,1,1*<CR><LF>
Parameter count mismatch.	*~ERROR,1*<CR><LF>
Object does not exist: The Integration ID or serial number entered does not map to a known part of the system	
Send command to an ID that is not valid	*#OUTPUT,1234,1,100.00*<CR><LF>
Object does not exist	*~ERROR,2*<CR><LF>
Invalid Action: The action does not exist for this command	
Send invalid action (4321) to Area 2	*#AREA,2,4321*<CR><LF>
Invalid action number	*~ERROR,3*<CR><LF>
Parameter data out of range: The parameter data is out of range for this action	
Send Output 11 to 120%	*#OUTPUT,11,1,120.00*<CR><LF>
Parameter data out of range	*~ERROR,4*<CR><LF>
Parameter data malformed: The parameter data given was not formatted properly	
Set Time to 12:23:24:25	*#SYSTEM,1,12:23:24:25*<CR><LF>
Invalid action number	*~ERROR,5*<CR><LF>

Integrator's Reference *(continued)*

HELP: Command Summary

HELP Command for a specific Command Name provides command-name specific usage information.

HELP Command Formats

Operation
|
?HELP, Command Name[1], Action Number[2]
|
Command

Example HELP Messages

Operation	Command String
Query: #HELP, Command Name, Action Number	
What are all the supported Integration Commands?	*?HELP*<CR><LF>
What actions are available for #OUTPUT?	*?HELP,#OUTPUT*<CR><LF>
How is “Raise” used for #OUTPUT?	*?HELP,#OUTPUT,2*<CR><LF>
Response: ~HELP, Help Information	
The list of all Integration Commands.	*#OUTPUT,?OUTPUT,#DEVICE,?DEVICE,#AREA, ?AREA,#TIMECLOCK,?TIMECLOCK,#SYSTEM, ?SYSTEM,#MONITORING,?MONITORING,* <CR><LF>

The help information for the #OUTPUT command.	*~HELP, #OUTPUT* requires action<1-6><CR><LF>
	1 = Set Level / Position
	2 = Start Raising
	3 = Start Lowering
	4 = Stop Raising / Lowering
	6 = Pulse
	USAGE: #OUTPUT, <ID>, <action>,<CR><LF>

The help information for the “Raise” action (#OUTPUT).	*~HELP, #OUTPUT*, <action=2> start raising output level<CR><LF> USAGE: #OUTPUT, <ID>, <action=2><CR><LF>

NOTES

1. The “Command Name” parameter is optional. If not entered, a list of all the supported Integration Commands will be printed. If a supported command name is entered, the corresponding actions will be listed.
2. The “Action” parameter is optional. When a valid action number is entered (i.e. it is supported by the corresponding “Command Name”), the help information for that particular action will be displayed.

Integrator's Reference *(continued)*

SYSTEM: Command Summary

SYSTEM Command provides support for location, device and system specific information such as Date, Time, Software Version Numbers, etc.

SYSTEM Command Formats

Operation
|
#SYSTEM, Action Number, Parameters
|
Command *Use "SYSTEM Command-specific fields" tables to complete these command fields.*

SYSTEM Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?)Time[1]	1	Time in: SS.ss, SS, MM:SS, or HH:MM:SS
Set or Get Date	2	Date in MM/DD/YYY
Set or Get Latitude and Longitude	4	Latitude = -90.00 to +90.00 degrees Longitude = -180.00 to +180.00 degrees
Set or Get Time Zone[2]	5	Hours = -12 to 12 Minutes = 0 to 59
Get Sunset	6	None
Get Sunrise	7	None
Get OS Rev	8	None
Set Load Shed[3]	11	0 = Disabled 1 = Enabled

Example SYSTEM Messages

Operation	Command String
Execute: #SYSTEM, Action Number, Parameters	
Set time to 5:45 PM.	*#SYSTEM,1,17:45*<CR><LF>
Set date to June 1, 2009.	*#SYSTEM,2,06/01/2009*<CR><LF>
Query: ?SYSTEM, Action Number	
What is the system time?	*?SYSTEM,1*<CR><LF>
What is the system date?	*?SYSTEM,2*<CR><LF>
Response: ~SYSTEM, Action Number, Parameters	
The system time is 11:05 AM.	*~SYSTEM,1,11:05:00*<CR><LF>
The system date is July 3, 2009.	*~SYSTEM,2,07/03/2009*<CR><LF>

NOTES

1. The system time must be entered in 24 hour format.
2. The Time Zone is referenced to GMT.
3. Load Shed commands only available on Quantum® version 2.0 and higher.

QS Standalone — System Overview

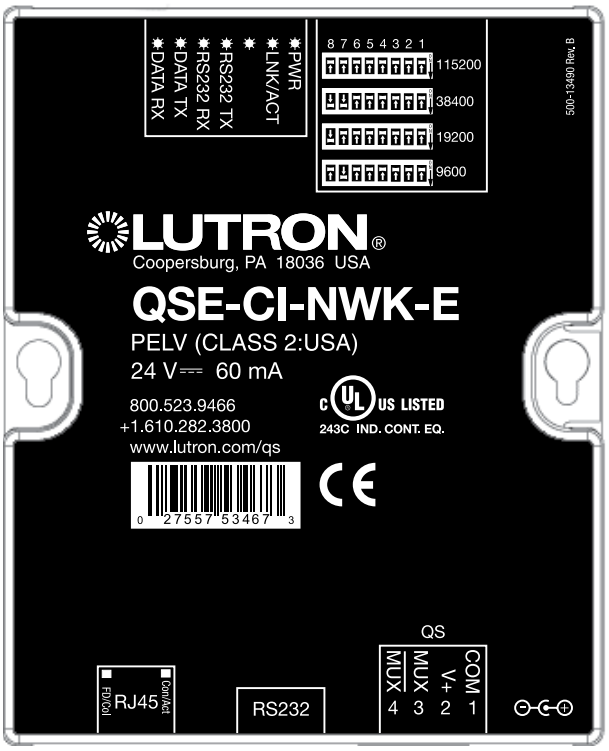
The QS family of products delivers scalable lighting and shading solutions for residential and commercial applications. At the center of the QS system are the GRAFIK Eye® QS control units, Energi Savr Node™ control units, and Sivoia® QS shades and drapes, providing direct control of electric and natural light. QS system devices communicate over the highly flexible QS link – the link allows for daisy-chain or t-tap wiring configurations. All QS system devices communicate without the need for interfaces, and addressing is automatic, eliminating the need to set DIP switches. In addition, QS keypads are configurable in the field to control lights, shades, lights + shades, or third-party devices. The QS system can easily be integrated with other systems through contact-closure input/output, DMX output, or Ethernet/RS232.

QS System Device Compatibility Index:

	QS Standalone
GRAFIK Eye® QS	✓
seeTouch® QS	✓
Sivoia® QS Shade	✓
Energi Savr Node™ QS DALI	✓
Energi Savr Node™ QS Int'l EcoSystem®	✓
Energi Savr Node™ QS Int'l 0-10V/Switching	✓
Energi Savr Node™ QS Int'l Phase Adaptive	✓
Energi Savr Node™ QS EcoSystem®	✓
Energi Savr Node™ QS 0-10V/Switching	✓

QS Standalone Integration Access Points Network Interface

Model: QSE-CI-NWK-E



Why Integrate with a QSE-CI-NWK-E?

- Integrates a QS lighting control system with a PC or other digital equipment that supports RS232 or Ethernet TCP/IP connection.
- Allows monitor and control of system devices. For example, the QSE-CI-NWK-E can be used to simulate button presses, report button presses, control light levels, and monitor light levels.

Additional Commands

- **MONITORING** specifies what type of messages the system will report
- **ETHERNET** modifies the Ethernet configurations of the QSE-CI-NWK-E
- **RESET** restarts the QSE-CI-NWK-E or restores it to factory defaults
- **INTEGRATION ID** assigns IDs to devices, so that they may be referred to in a more logical fashion
- **DETAILS** returns information about a QS device
- **ERROR** reports syntax errors in an integration string command or query
- **PROGRAMMING** allows user to program Phantom Buttons on the NWK supported in version 8.0 or higher
- **DEVICE** used to activate Phantom Buttons on the NWK
- Programming and device commands require version 8.0 or higher of the NWK software

QS Standalone Integration Access Points *(continued)*

Connection Information

Provides an RS232 and Ethernet connection to communicate with external equipment. Communication is through either RS232 or Ethernet, but not both simultaneously.

RS232

The RS232 connection has the following communication settings:

- Baud Rate 9600/19200/38400/115200 (set via dipswitch on unit)
- 8 data bits
- No parity bit
- 1 stop bit
- No flow control

Ethernet

Configuring the control interface to communicate over a network takes not only knowledge of the QS system, but of networking as well. Installers with limited networking knowledge are advised to contact a networking professional before attempting to connect a QSE-CI-NWK-E through a network. The information below will help an installer communicate the QSE-CI-NWK-E configurations to a network professional.

The installer will make any necessary changes to the control interface using the Lutron® DeviceIP or PC software tool and the network professional can make any necessary changes to the networking equipment.

Single Ethernet Port

- IEEE® 802.3 Auto-Sensing 10BaseT/100BaseTX
- Supports MDI/MDIX auto-crossover (no crossover cable needed).
- Female 8P8C “Computer RJ-45” socket
- Green "Connect" LED, Amber "Activity" LED
- Use Cat 5 cabling or better

TCP/IP Settings

- IP Address: <static default = 192.168.250.1>
- Subnet Mask: < static default = 255.255.255.0>
- Gateway: <static default = 0.0.0.0>

Protocols Used for Integration

- TELNET

Telnet Server

- Used by third party equipment (i.e. touch screen)
- Limited to transferring ASCII characters
- Telnet Port number is 23
- Login #1: nwk
- Login #2: nwk2

QS Standalone System Commands

QSE-CI-NWK-E: ETHERNET Commands

ETHERNET Command Formats

Operation
#ETHERNET, Configuration Number, Parameters
Command *Use "ETHERNET Command-specific fields" tables to complete these command fields.*

ETHERNET Command-specific fields

Configuration Numbers:

Description	Configuration Number	Parameters
Set IP Address	0	Address (XXX.XXX.XXX.XXX)
Set Gateway Address	1	Address (XXX.XXX.XXX.XXX)
Set Subnet Mask	2	Address (XXX.XXX.XXX.XXX)
Change Login Info	3	User (1 or 2), Old Login, New Login

Example ETHERNET Commands

Operation	Command String
Execute: #ETHERNET, Configuration Number, Parameters	
Set IP Address to 192.168.250.1	*#ETHERNET,0,192.168.250.1*<CR><LF>
Set Gateway Address to 10.2.4.1	*#ETHERNET,1,10.2.4.1*<CR><LF>
Query: ?ETHERNET, Configuration Number, Parameters	
What is the IP Address?	*?ETHERNET,0*<CR><LF>
What is the Login Information for user 1?	*?ETHERNET,3,1*<CR><LF>
What is the Login Information for ALL users? (Note: 0=ALL)	*?ETHERNET,3,0*<CR><LF>
Response: ~DEVICE, Integration ID, Configuration Number, Parameters	
The IP Address is 192.168.250.1	*~ETHERNET,0=,192.168.250.1*<CR><LF>

QS Standalone System Commands *(continued)*

QSE-CI-NWK-E: INTEGRATION ID Commands

INTEGRATION ID Command Formats

Operation

#INTEGRATIONID, Action Number, Parameters

Command *Use "INTEGRATIONID Command-specific fields" tables to complete these command fields.*

INTEGRATION ID Command-specific fields

Action Numbers and **Parameters:**

Description	Action Number	Parameters
Set or Get Integration ID for a Serial Number	1	Serial Number = 8 character HEX serial number of the device, Integration ID = The integration ID to be assigned.
Change Integration ID	2	Current Integration ID, New Integration ID **NOTE:** An error will be reported if the new Integration ID is the same as an existing Integration ID in the system.
Get Info from ID	3	Integration ID **NOTE:** If this field is left blank, all integration IDs will be printed.
Set or Get output Integration ID	4	Serial Number, Component Number, Integration ID

Example INTEGRATION ID Commands

Operation	Command String
Execute: #INTEGRATIONID, Action Number, Parameters	
Set the Integration ID for a serial number	*#INTEGRATIONID,1,1234ABCD,kitchen dimmer*<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Set the Integration ID for a serial number	*~INTEGRATIONID,1,1234ABCD,kitchen dimmer*<CR><LF>
Execute: ?INTEGRATIONID, Action Number, Parameters	
Get the Integration ID for a serial number	*?INTEGRATIONID,1,5678EFEF*<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Get the Integration ID for a serial number	*~INTEGRATIONID,1,5678EFEF,living room keypad*<CR><LF>
Execute: #INTEGRATIONID, Action Number, Parameters	
Change the Integration ID	*#INTEGRATIONID,2,diningroomlights1,diningroomaccents*<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Change the Integration ID	*~INTEGRATIONID,2,diningroomlights1,diningroomaccents*<CR><LF>
Execute: ?INTEGRATIONID, Action Number, Parameters	
Get information about an Integration ID command	*?INTEGRATIONID,3,livingroomkeypad*<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Get information about an Integration ID command	*~INTEGRATIONID,3,livingroomkeypad,DEVICE,5678EFEF*<CR><LF>

QS Standalone System Commands *(continued)*

QSE-CI-NWK-E: DETAILS String

DETAILS Command Formats

Operation
|
?DETAILS, ID[1]
|
Command

Example DETAILS String

Operation	Command String
Query: ?DETAILS, ID	
Get details of the device with serial ID number 00AC123D	*?DETAILS,00AC123D*<CR><LF>
Response: ~DETAILS, Serial Number, Name, Family, Model, Software Rev., Boot Software Rev.	
The device with serial ID number 00AC123D has the following information: Name = GRAFIK Eye 1 Product Family = GRAFIK Eye Product Model = QSG Software Revision = 1.70 Boot Code Software Revision = 2	*~DETAILS,SN:00AC123D,IntegrationID:GRAFIKEye1,Family:GRAFIK_Eye(2),Product:QSG(1),CODE:1.70,Boot:2.1,HW:1.1*<CR><LF>

NOTE

1. Device ID may be entered as the serial ID number or the Integration ID. Use ALL_DEVICES or FFFFFFFF to query all devices on the link.

QS Standalone System Commands *(continued)*

QSE-CI-NWK-E: RESET Commands

RESET Command Formats

Operation

#RESET, Action Number

Command *Use "RESET Command-specific fields" tables to complete these command fields.*

RESET Command-specific fields

Action Numbers:

Action	Action Number
Restart the device	0
Restore to factory defaults	1

Example RESET Commands

Operation	Command String
Execute: #RESET, Action Number	
Restart the NWK	*#RESET,0*<CR><LF>
Restore NWK to factory defaults	*#RESET,1*<CR><LF>

QS Standalone System Commands *(continued)*

QSE-CI-NWK-E: PROGRAMMING Commands

PROGRAMMING Command Formats

Operation | *Integration ID or Serial # of the QSE-CI-NWK being used*

#PROGRAMMING, 1, Button Number, Action Number, Parameters

Command | *Phantom Button Number (can be 1–100)* | *Use "PROGRAMMING Command-specific fields" tables to complete these command fields.*

PROGRAMMING Command-specific fields

Action Numbers and **Parameters:**

Description	Action Number	Parameters
Add programming to a phantom button (Shade level only)	1	a) Shade Integration ID – The Integration ID of the shade being programmed b) Shade Component # – Always '0' c) Level – The level to which the shade being programmed will go to on activation of this button
Clear programming from a phantom button. **NOTE:** Use button #0 to clear programming from all buttons.	3	None
Configure Stop-If-Moving functionality **NOTE:** Use button #0 to configure Stop-If-Moving functionality on all buttons.	4	0 = Stop-If-Moving Off 1 = Stop-If-Moving On
Add programming to a phantom button (Venetian blind, lift & tilt levels)	5	a) Venetian Integration ID b) Component Number (always 0) c) Lift level d) Tilt level
Add programming to a phantom button (Venetian blind, tilt only)	6	a) Venetian Integration ID b) Component Number (always 0) c) Tilt level
Add programming to a phantom button (Venetian blind, lift only)	7	a) Venetian Integration ID b) Component Number (always 0) c) Lift level

NOTE

A maximum of 500 programming assignments can be made in the QSE-CI-NWK-E.

QS Standalone System Commands *(continued)*

QSE-CI-NWK-E: PROGRAMMING Commands *(continued)*

Example PROGRAMMING Commands

For a system of one shade (Integration ID "living room sheer"), one Venetian blind ("kitchen venetian"), and one QSE-CI-NWK (Integration ID "1"), the following examples show how programming can be done.

Operation	Command String
Add shade at 100% to phantom button 1	*#PROGRAMMING,1,1,1,living room sheer,0,100*<CR><LF>
Response Received	*~PROGRAMMING,1,1,1,living room sheer,0,100*<CR><LF>
Add Venetian blind at 0% lift and 50% tilt to phantom button 2	*#PROGRAMMING,1,2,5,kitchen venetian,0,0,50*<CR><LF>
Response Received	*~PROGRAMMING,1,2,5,kitchen venetian,0,0,50*<CR><LF>
Add Venetian blind at 75% tilt to phantom button 3	*#PROGRAMMING,1,3,6,kitchen venetian,0,75*<CR><LF>
Response Received	*~PROGRAMMING,1,3,6,kitchen venetian,0,75*<CR><LF>
Add Venetian blind at 15% lift to phantom button 4	*#PROGRAMMING,1,4,7,kitchen venetian,0,15*<CR><LF>
Response Received	*~PROGRAMMING,1,4,7,kitchen venetian,0,15*<CR><LF>
Add shade at 50% to phantom button 2	*#PROGRAMMING,1,2,1,dining room blackout,0,50*<CR><LF>
Response Received	*~PROGRAMMING,1,2,1,dining room blackout,0,50*<CR><LF>
Turn On Stop-If-Moving for phantom button 5	*#PROGRAMMING,1,5,4,1*<CR><LF>
Response Received	*~PROGRAMMING,1,5,4,1*<CR><LF>
Clear programming from all the phantom buttons	*#PROGRAMMING,1,0,3*<CR><LF>
Response Received	Repeat command to clear all phantom button programming
Repeat command to clear all phantom button programming	*#PROGRAMMING,1,0,3*<CR><LF>
Response Received	*~PROGRAMMING,1,0,3*<CR><LF>
Clear programming from phantom button 6	*#PROGRAMMING,1,6,3*<CR><LF>
Response Received	*~PROGRAMMING,1,6,3*<CR><LF>

QS Standalone System Commands *(continued)*

QSE-CI-NWK-E: PROGRAMMING Commands

PROGRAMING Command Formats

Operation — *Integration ID or Serial # of the QSE-CI-NWK being used*

?PROGRAMMING, 1, Button Number, Action Number

Command — *Phantom Button # (can be 1–100)* — *Use "PROGRAMMING Command-specific fields" tables to complete these command fields.*

PROGRAMMING Command-specific fields

Action Numbers and **Parameters:**

Description	Action Number	Parameters
Display programming of a specific phantom button **NOTE:** To display programming of all phantom buttons, leave the button # field blank	None	None
Display Stop-If-Moving configuration of a specific phantom button **NOTE:** To display Stop-If-Moving configuration of all phantom buttons, use button #0	4	None

Example PROGRAMMING Commands

The following examples show how to verify the programming of the phantom buttons of a QSE-CI-NWK-E with an Integration ID of "1."

Operation	Command String
Display programming of phantom button 1	*?PROGRAMMING,1,1*<CR><LF>
Display programming of all phantom buttons	*?PROGRAMMING,1*<CR><LF>
Display Stop-If-Moving configuration of phantom button 5	*?PROGRAMMING,1,5,4*<CR><LF>
Display Stop-If-Moving configuration of all phantom buttons	*?PROGRAMMING,1,0,4*<CR><LF>

QS Standalone System Commands *(continued)*

QSE-CI-NWK-E: DEVICE Commands

DEVICE Command Formats

Operation | *Integration ID or Serial # of the QSE-CI-NWK being used*

#DEVICE, 1, Button Number, Action Number, Parameters

Command | *Phantom Button Number (can be 1-100)* | *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Action Numbers and Parameters:

Description	Action Number	Parameters
Activate the phantom button preset	3	None
Set a custom level of the shades programmed to the phantom button	14[1]	Level - The level the shades will go to[1]
Raise the shades and venetians	18[2]	None
Lower the shades and venetians	19[2]	None
Stop the shades and venetians	20	None
Set a custom lift and tilt level of venetian blinds programmed to the phantom button	23[1]	Lift level % Tilt level %
Set a custom lift level only of venetian blinds programmed to the phantom button	24[1]	Lift level %
Set a custom tilt level only of venetian blinds programmed to the phantom button	25[1]	Tilt level %

NOTES

1. Specifying a custom level above will not affect the preset level programmed for the phantom button.
2. For Venetian blinds, the Raise & Lower Actions will affect either the lift or the tilt based on how the phantom button was programmed. If #PROGRAMMING Action 5 is used (affecting both lift and tilt levels), then the Raise & Lower Actions will affect the tilt.

Example DEVICE Commands

The following examples show how we can activate phantom buttons on a link with a QSE-CI-NWK-E whose Integration ID is "1."

Operation	Command String
Activate Preset on phantom button 1	*#DEVICE,1,1,3*<CR> <LF>
Set the level of all shades programmed to phantom button 2 to 50%	*#DEVICE,1,2,14,50*<CR><LF>
Set all venetian blinds programmed to phantom button 3 to a lift level of 50% and tilt level of 25%	*#DEVICE,1,3,23,50,25*<CR><LF>
Set all venetian blinds programmed to phantom button 4 to a lift level of 50%	*#DEVICE,1,4,24,50*<CR><LF>
Set all venetian blinds programmed to phantom button 5 to a tilt level of 25%	*#DEVICE,1,5,25,25*<CR><LF>
Raise the shades and venetian blinds programmed to phantom button 6	*#DEVICE,1,6,18*<CR><LF>
Lower shades and venetian blinds programmed to phantom button 7	*#DEVICE,1,7,19*<CR><LF>
Stop shades and venetian blinds programmed to phantom button 8	*#DEVICE,1,8,20*<CR><LF>

RadioRA® 2 - System Overview

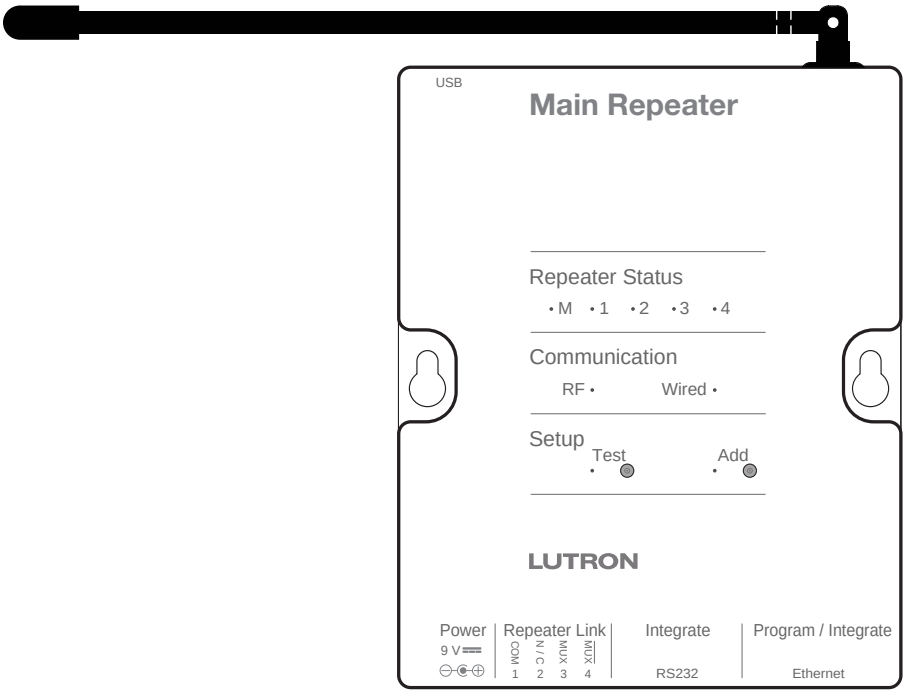
RadioRA® 2 is a wireless multi-room control system for lights and shades. The system is made up of repeaters, dimmers, keypads, and other devices. The Lutron® proven, patented RF technology ensures reliable performance. With the RadioRA® 2 system, you can: create the right ambience for varied activities, easily monitor and control your lights, reduce energy usage, and increase safety in and around your home.

RadioRA® 2 System Device Compatibility Index:

	RadioRA® 2
Maestro® Dimmers	✓
Tabletop seeTouch® Keypad	✓
Visor Control Receiver	✓
GRAFIK Eye® QS	✓
seeTouch® Keypads	✓
Sivoia® QS Wireless Shades	✓
Hybrid Keypads	✓
Pico® Wireless Controls	✓
Radio Powr Savr™ Sensors	✓
HVAC Controllers	✓
Plug-In Modules	✓

RadioRA® 2 Integration Access Points
Main Repeater

Model: RR-MAIN-REP-WH, RRK-MAIN-REP-WH



Why Integrate with a RadioRA® 2 Main Repeater?

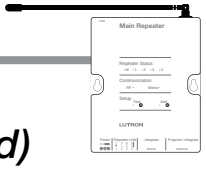
- Integrates a RadioRA® 2 lighting control system with a PC or other digital equipment that supports RS232 or Ethernet TCP/IP communication.
- Allows monitoring and control of system devices. For example, the Main Repeater can be used to simulate button presses, report button presses, monitor LEDs, and control light levels of dimmers.

Integration Capabilities

- 100 “virtual” programmable buttons with LEDs (use DEVICE command)
- Monitoring of changes to other system devices (use MONITORING command)

Additional Commands

- **MONITORING** commands are used to program what types of messages the system will report



RadioRA® 2 Integration Access Points *(continued)*

Connection Information

Provides an RS232 and Ethernet connection to communicate with external equipment.

RS232

The RS232 connection has the following communication settings:

- Baud Rate 9600
- 8 data bits
- No parity bit
- 1 stop bit
- No flow control

Ethernet

Configuring the control interface to communicate over a network takes not only knowledge of the RadioRA® 2 system, but of networking as well. Installers with limited networking knowledge are advised to contact a networking professional before attempting to connect a control interface through a network. The information below will help an installer communicate the control interface configurations to a network professional.

The installer will make any necessary changes to the control interface using the Lutron® DeviceIP or RadioRA® 2 PC software tool and the network professional can make any necessary changes to the networking equipment.

Single Ethernet Port

- IEEE® 802.3 Auto-Sensing 10BaseT/100BaseTX
- Supports MDI/MDIX auto-crossover (no crossover cable needed).
- Female 8P8C “Computer RJ-45” socket
- Green "Connect" LED, Amber "Activity" LED
- Use Cat 5 cabling or better

TCP/IP Settings

- DHCP (dynamic) or static configuration <factory default = DHCP>
- IP Address: <static default = 192.168.1.50 or dynamic configuration>
- Subnet Mask: < static default = 255.255.255.0 or dynamic configuration >
- Gateway: <static default = 0.0.0.0 or dynamic configuration>

Protocols Used for Integration

- TELNET

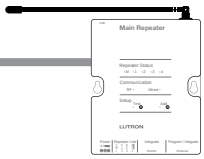
Telnet Server

- Up to 4 telnet sessions can be accessed through Essentials Software
- Used by software and/or third party equipment (i.e. touch screen)
- Limited to transferring ASCII characters
- Telnet Port number is 23, can be changed using the Lutron® DeviceIP software or RadioRA® 2 PC software
- Login: lutron
- Password: integration

Notes: -Up to four additional login and password values can be defined in the RadioRA® 2 PC software.
-Only one connection per login/password is allowed at a time.

UDP Multicast Messaging

- Used by the RadioRA® 2 PC software during device configuration and system programming
- There are no user modifiable settings for UDP messaging



RadioRA® 2 System Commands

RR-MAIN-REP-WH: DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*

#DEVICE, 1, Component Number, Action Number, Parameters

Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

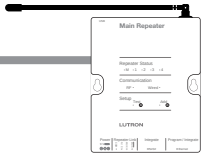
Component	Component Number	Available Actions
Button 1–100	1–100	Press, Release
LED 1–100	101–200	Set or Get LED state

Action Numbers and Parameters:

Action	Action Number	Parameters
Press	3	None
Release	4	None
Set or Get LED State	9	0 = Off 1 = On

Example DEVICE Commands

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	*#DEVICE,4,1,3*<CR><LF>
Release Button 1	*#DEVICE,4,1,4*<CR><LF>
Turn On LED 1.	*#DEVICE,4,101,9*<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	*?DEVICE,4,101,9*<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	*~DEVICE,4,101,9,1*<CR><LF>



RadioRA® 2 System Commands *(continued)*

RR-MAIN-REP-WH: Group Commands

GROUP Command Format

Operation *Integration ID (example)*

?GROUP, 6, Action Number

Command *Use "GROUP Command-specific fields" tables to complete these command fields.*

GROUP Command-specific fields

Occupancy States:

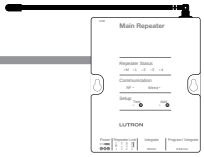
Description	Value
Occupied	3
Unoccupied	4
Unknown	255

Action Numbers:

Action	Action Number
Get (?) Occupancy Group State	3

Example GROUP Messages

Operation	Command String
Query: ?GROUP, Integration ID, Action Number	
What is Occ GROUP 1's status?	*?GROUP,1,3*<CR><LF>
Response: ~ GROUP, Integration ID, Action Number, Parameters	
Occ group 1 is occupied	*~GROUP,1,3,3*<CR><LF>
Occ group 1 is unknown	*~GROUP,1,3,255*<CR><LF>



RadioRA® 2 System Commands *(continued)*

RR-MAIN-REP-WH: MONITORING Commands

MONITORING Command Formats

Operation
|
#MONITORING, Monitoring Type, Action Number
|
Command *Use "MONITORING Command-specific fields" tables to complete these command fields.*

MONITORING Command-specific fields

Monitoring Type:

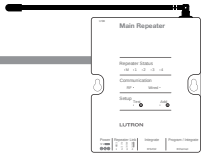
Description	Monitoring Type
Diagnostic Monitoring	1
Button Monitoring (if enabled, button actions will be reported)	3
LED Monitoring (if enabled, LED states will be reported)	4
Zone Monitoring (if enabled, zone levels will be reported, i.e. dimmer, shade, contact closure output level)	5
Reply State (if disabled, all messages FROM the integration access point will cease)	11
Prompt State (if disabled, the prompt will not be printed to the terminal)	12
Set or Get State of All Monitoring (except Reply and Prompt)	255

Action Numbers:

Action	Action Number
Enable	1
Disable	2

Example MONITORING Commands

Operation	Command String
Execute: #MONITORING, Monitoring Type, Action Number	
Disable Diagnostic Monitoring.	*#MONITORING,1,2*<CR><LF>
Enable Event Monitoring.	*#MONITORING,2,1*<CR><LF>
Query: ?MONITORING, Monitoring Type	
Is Diagnostic Monitoring disabled?	*?MONITORING,1*<CR><LF>
Response: ~MONITORING, Monitoring Type, Action Number	
Diagnostic Monitoring is disabled.	*~MONITORING,1,2*<CR><LF>



RadioRA® 2 System Commands *(continued)*

RR-MAIN-REP-WH: TIMECLOCK Commands

TIMECLOCK Command Formats

Operation *Integration ID (example)*

#TIMECLOCK,4,Action Number, Parameters

Command *Use "TIMECLOCK Command-specific fields" tables to complete these command fields.*

TIMECLOCK Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Current Timeclock Mode [1]	1	Mode
Get (?) Current Timeclock Mode	1	None
Get (?) Sunrise Time	2	None
Get (?) Sunset Time	3	None
Get (?) Day's Schedule	4	None
Execute (#) event	5	Index of the event to test. The index number of the first event is 1; the second event is 2, and so on.

NOTES

1. In order to set the Timeclock Mode, the "mode" settings must first be determined using the ?help,#timeclock,1 command.

Example TIMECLOCK Messages

Operation	Command String
Execute: #TIMECLOCK, Integration ID, Action Number, Parameters	
Execute the 3rd event of the time clock.	*#TIMECLOCK,4,5,3*<CR><LF>
Query: ?TIMECLOCK, Integration ID, Action Number	
What is the sunrise time?	*?TIMECLOCK,4,2*<CR><LF>
Response: ~TIMECLOCK, Integration ID, Action Number, Parameters	
The time the sun rises.	*~TIMECLOCK,4,2,05:32*<CR><LF>

Clear Connect® Gateway System - System Overview

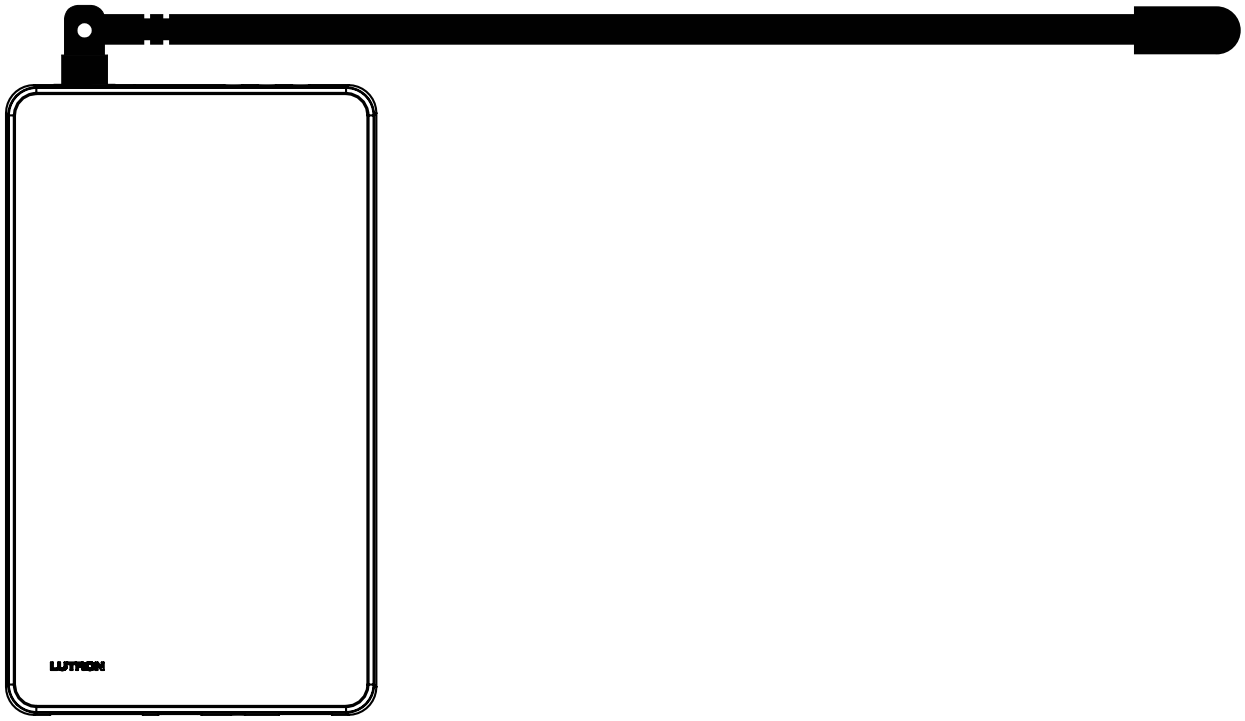
The Clear Connect® Gateway System is a wireless multi-room control system for lights and shades. The system is made up of repeaters, dimmers, keypads, and other devices. The Lutron® proven, patented RF technology ensures reliable performance. With the Clear Connect® Gateway system, you can: create the right ambience for varied activities, easily monitor and control your lights, reduce energy usage, and increase safety in and around your home.

Clear Connect® System Device Compatibility Index:

	Clear Connect® Gateway System
Maestro® Dimmers	✓
seeTouch® Keypad	✓
Sivoia® QS Wireless Shades	✓
Radio Powr Savr™ Sensors	✓

Clear Connect® Gateway System Integration Access Points

Models: NXB-CCG, NXB-CCG-K



Why Integrate with a Clear Connect® Gateway System?

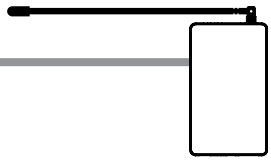
- Integrates a Clear Connect® lighting control system with a PC or other digital equipment that supports Ethernet TCP/IP communication.
- Allows monitoring and control of system devices. For example, the Translator can be used to simulate button presses, report button presses, monitor LEDs, and control light levels of dimmers.

Integration Capabilities

- 100 “virtual” programmable buttons with LEDs (use DEVICE command).

Additional Commands

- **PING** commands are used to verify network connectivity.



Clear Connect® Gateway System Integration Access Points *(continued)*

Connection Information

Provides an Ethernet connection to communicate with external equipment.

Ethernet

Configuring the control interface to communicate over a network takes not only knowledge of the Clear Connect® Gateway System, but of networking as well. Installers with limited networking knowledge are advised
to contact a networking professional before attempting to connect a control interface through a network. The information below will help an installer communicate the control interface configurations to a network professional.

The installer will make any necessary changes to the control interface using the Integrated Web Configuration tool and the network professional can make any necessary changes to the networking equipment.

Single Ethernet Port

- IEEE® 802.3 Auto-Sensing 10BaseT/100BaseTX
- Supports MDI/MDIX auto-crossover (no crossover cable needed).
- Female 8P8C “Computer RJ-45” socket
- Green "Connect" LED, Amber "Activity" LED
- Use Cat 5 cabling or better

TCP/IP Settings

- DHCP (dynamic) or static configuration <factory default = DHCP>
- IP Address: <static or dynamic configuration>
- Subnet Mask: < static or dynamic configuration >
- Gateway: <static or dynamic configuration>

Protocols Used for Integration

- Raw socket (Telnet port)
- SSH

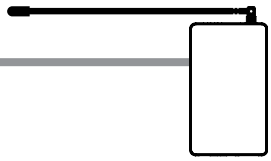
Server

- Up to 10 usernames can be created. Each username supports multiple simultaneous connections
- Used by software and/or third party equipment (i.e. touch screen)
- Limited to transferring ASCII characters
- Raw Socket port number is 23; can be changed in the Web Configuration tool
- SSH port number is 22; cannot be changed
- Default Integration Login information

  NXB-CCG / NXB-CCG-K:

  - Login: amx
  - Password: clearconnect

Connection information continued on next page...



Clear Connect® Gateway System Integration Access Points *(continued)*

Connection Information *(continued)*

System Configuration

- Default web admin information

  NXB-CCG / NXB-CCG-K:

  - Login: admin
  - Password: 1988

- XML file extraction is supported

  a) Browsing to “/xml” after logging in will return the XML data for the system

  b) Browsing to “/xml?login=<user>&password=<password>” will return the XML data without first having to log in

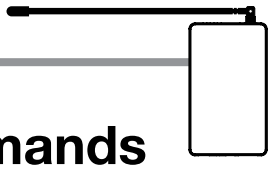
  Notes: - The "login" info can use either web login or integration login credentials.

- ZeroConf discovery of the CCT device

  a) The device will present itself as:

  - NXB-CCG or NXB-CCG-K will present itself as "NXB-CCG-<Numeric Portion of Serial Number>"

  b) The domain suffix is displayed next to the hostname in the Web Configuration tool



Clear Connect® Gateway System Commands
Access Points: DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*

#DEVICE, 1, Component Number, Action Number, Parameters

Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Button 1–100	1–100	Press, Release
LED 1–100	101–200	Set or Get LED state

Action Numbers and Parameters:

Action	Action Number	Parameters
Press	3	None
Release	4	None
Set or Get LED State	9	0 = Off 1 = On

Example DEVICE Commands

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	*#DEVICE,4,1,3*<CR><LF>
Release Button. 1	*#DEVICE,4,1,4*<CR><LF>
Turn On LED 1.	*#DEVICE,4,101,9*<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	*?DEVICE,4,101,9*<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	*~DEVICE,4,101,9,1*<CR><LF>

Clear Connect® Gateway System Commands
(continued)
Access Points: Group Commands

GROUP Command Format

Operation *Integration ID (example)*
?GROUP, 6, Action Number
Command *Use "GROUP Command-specific fields" tables to complete these command fields.*

GROUP Command-specific fields

Occupancy States:

Description	Value
Occupied	3
Unoccupied	4
Unknown	255

Action Numbers:

Action	Action Number
Get (?) Occupancy Group State	3

Example GROUP Messages

Operation	Command String
Query: ?GROUP, Integration ID, Action Number	
What is Occ GROUP 1's status?	*?GROUP,1,3*<CR><LF>
Response: ~ GROUP, Integration ID, Action Number, Parameters	
Occ group 1 is occupied	*~GROUP,1,3,3*<CR><LF>
Occ group 1 is unknown	*~GROUP,1,3,255*<CR><LF>

Clear Connect® Gateway System Commands *(continued)*

Access Points: PING Command

PING Command Formats

Operation
|
#PING
|
Command

Example PING Command

Operation	Command String
Execute: #PING	
Ping to verify connectivity	*#PING*
Response: ~PING	
Connection is established	*~PING*

Quantum® - System Overview

The Quantum® system is the Lutron® premier commercial lighting control system. It allows the control and monitoring of individual devices and outputs as well as allowing control of entire areas, shade groups or other portions of the system. The Quantum® system includes QS devices such as the GRAFIK Eye® QS and Sivoia® QS shades as well as Lutron® EcoSystem® ballasts and GRAFIK™ dimming panels. When integrating with a Quantum® system the integrator gets additional access to portions of a the system not available when using products in stand-alone mode, particularly the ability to activate scenes on an area-by-area basis and to control the position of and activate presets on entire groups of shades at once.

Quantum® System Device Compatibility Index:

	Quantum®
GRAFIK Eye® QS	✓
seeTouch® QS	✓
Sivoia® QS Shade	✓
QS Input/Output Interface	✓
Energi Savr Node™ QS DALI	✓
Energi Savr Node™ QS Int'l EcoSystem®	✓
Energi Savr Node™ QS Int'l 0-10V/Switching	✓
Energi Savr Node™ QS Int'l Phase Adaptive	✓
Energi Savr Node™ QS EcoSystem®	✓
Energi Savr Node™ QS 0-10V/Switching	✓

Why Integrate with a Quantum® System

- Compatible with Quantum® system version 1.7 or higher
- Gain access to system only information
- Activate System Area scenes
- Set levels for System Outputs
- Activate System Shade Group presets
- View and modify parameters of a Quantum® system, such as time, date, time zone, etc.

Command Types

Operation characters will be followed by command types:

- **AREA** allows control of an area in the Quantum® system. Scenes can be activated, occupancy monitored etc.
- **SHADEGRP** allows control of shade groups in the Quantum® system. Shade Groups are collections of shades that operate in unison
- **OUTPUT** allows control and monitoring of a Quantum® system output group such as a lighting zone or closure output.
- **SYSTEM** allows setting and controlling system parameters and variables*
- **HELP** displays usage information for the supported commands and their corresponding actions
- **INTEGRATION ID** allows querying integration IDs of devices in the system

* Load Shed commands only available on Quantum® version 2.0 and higher.

Quantum® Integration Access Points Network Interface

Model: QSE-CI-NWK-E

Why Integrate with a QSE-CI-NWK-E?

- Integrates a QS lighting control system with a PC or other digital equipment that supports RS232 or Ethernet TCP/IP connection.
- Allows monitor and control of system devices. For example, the QSE-CI-NWK-E can be used to simulate button presses, report button presses, monitor LEDs, and control light levels.

Additional Commands

- **MONITORING** specifies what type of messages the system will report
- **ETHERNET** modifies the Ethernet configurations of the QSE-CI-NWK-E
- **RESET** restarts the QSE-CI-NWK-E or restores it to factory defaults
- **INTEGRATION ID** assigns IDs to devices, so that they may be referred to in a more logical fashion
- **DETAILS** returns information about a QS device
- **ERROR** reports syntax errors in an integration string command or query

Quantum® Integration Access Points *(continued)*

Connection Information

Provides an RS232 and Ethernet connection to communicate with external equipment.

RS232

The RS232 connection has the following communication settings:

- Baud Rate 9600/19200/38400/115200 (set via dipswitch on unit)
- 8 data bits
- No parity bit
- 1 stop bit
- No flow control

Ethernet

Configuring the control interface to communicate over a network takes not only knowledge of the Quantum® system, but of networking as well. Installers with limited networking knowledge are advised to contact a networking professional before attempting to connect a QSE-CI-NWK-E through a network. The information below will help an installer communicate the QSE-CI-NWK-E configurations to a network professional.

The installer will make any necessary changes to the control interface using the Lutron® DeviceIP or Quantum® PC software tool and the network professional can make any necessary changes to the networking equipment.

Single Ethernet Port

- IEEE® 802.3 Auto-Sensing 10BaseT/100BaseTX
- Supports MDI/MDIX auto-crossover (no crossover cable needed).
- Female 8P8C “Computer RJ-45” socket
- Green "Connect" LED, Amber "Activity" LED
- Use Cat 5 cabling or better

TCP/IP Settings

- IP Address: <static default = 192.168.250.1>
- Subnet Mask: < static default = 255.255.255.0>
- Gateway: <static default = 0.0.0.0>

Protocols Used for Integration

- TELNET

Telnet Server

- Used by third party equipment (i.e. touch screen)
- Limited to transferring ASCII characters
- Telnet Port number is 23
- Login #1: nwk
- Login #2: nwk2

Quantum® System Commands

QSE-CI-NWK-E: ETHERNET Commands

ETHERNET Command Formats

Operation

#ETHERNET, Configuration Number, Parameters

Command *Use "ETHERNET Command-specific fields" tables to complete these command fields.*

ETHERNET Command-specific fields

Configuration Numbers:

Description	Configuration Number	Parameters
Set IP Address	0	IP Address (XXX.XXX.XXX.XXX)
Set Gateway Address	1	IP Address (XXX.XXX.XXX.XXX)
Set Subnet Mask	2	IP Address (XXX.XXX.XXX.XXX)
Change Login Info	3	User (1 or 2), Old Login, New Login

Example ETHERNET Commands

Operation	Command String
Execute: #ETHERNET, Configuration Number, Parameters	
Set IP Address to 192.168.250.1	*#ETHERNET,0,192.168.250.1*<CR><LF>
Set Gateway Address to 10.2.4.1	*#ETHERNET,1,10.2.4.1*<CR><LF>
Query: ?ETHERNET, Configuration Number, Parameters	
What is the IP Address?	*?ETHERNET,0*<CR><LF>
What is the Login Information for user 1?	*?ETHERNET,3,1*<CR><LF>
What is the Login Information for ALL users?	*?ETHERNET,3,0*<CR><LF> (Note: 0=ALL)
Response: ~ETHERNET, Integration ID, Configuration Number, Parameters	
The IP Address is 192.168.250.1	*~ETHERNET,0,192.168.250.1*<CR><LF>

Quantum® System Commands *(continued)*

QSE-CI-NWK-E: INTEGRATION ID Commands

INTEGRATION ID Command Formats

Operation

?INTEGRATIONID, Action Number, Parameters

Command

Use "INTEGRATIONID Command-specific fields" tables to complete these command fields.

INTEGRATION ID Command-specific fields

Action Numbers and **Parameters:**

Description	Action Number	Parameters
Get Integration ID for a Serial Number	1	Serial Number - 8 character HEX serial number of the device, Integration ID - The integration ID to be assigned.
Get Info from ID	3	Integration ID = The Integration ID that information is desired for. **NOTE:** If this field is left blank, all integration IDs will be printed.

Example INTEGRATION ID Commands

Operation	Command String
Execute: ?INTEGRATIONID, Action Number, Parameters	
Get the Integration ID for a serial number	*?INTEGRATIONID,1,5678EFEF*<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Get the Integration ID for a serial number	*~INTEGRATIONID,1,5678EFEF,1*<CR><LF>
Execute: ?INTEGRATIONID, Action Number, Parameters	
Get information about an Integration ID command	*?INTEGRATIONID,3,1*<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Get information about an Integration ID command	*~INTEGRATIONID,3,1,DEVICE,5678EFEF*<CR><LF>

Quantum® System Commands *(continued)*

QSE-CI-NWK-E: RESET Commands

RESET Command Formats

Operation

#RESET, Action Number

Command *Use "RESET Command-specific fields" tables to complete these command fields.*

RESET Command-specific fields

Action Numbers:

Action	Action Number
Restart the device	0
Restore to factory defaults	1

Example RESET Commands

Operation	Command String
Execute: #RESET, Action Number	
Restart the NWK	*#RESET,0*<CR><LF>
Restore NWK to factory defaults	*#RESET,1*<CR><LF>

Quantum® System Commands *(continued)*

QSE-CI-NWK-E: AREA Commands

AREA Command Formats

Operation *Integration ID (example)*

#AREA[1,2], 2, Action Number, Parameters

Command *Use "AREA Command-specific fields" tables to complete these command fields.*

AREA Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Area Level	1	Level[3] = 0–100 or 0.00–100.00 Fade[4] in: SS.ss[5], SS, MM:SS, or HH:MM:SS Delay[4] in: SS.ss[5], SS, MM:SS, or HH:MM:SS
Start Raising[6]	2	None
Start Lowering[6]	3	None
Stop Raising/Lowering	4	None
Set or Get Current Scene	6	Scene Number[7] = 0–32
Set or Get Daylighting Mode	7	1 = Active 2 = Inactive
Get Occupancy State	8	3 = Occupied 4 = Unoccupied
Set or Get Occupancy Mode	9	1 = Occupancy and Vacancy[8] 2 = Vacancy[8] 3 = Not Applicable[9] 4 = Inactive
Get or Set Occupied Level or Scene	12	Level = 0–100; 200-232 for Scene Number = 0–32
Get or Set Unoccupied Level or Scene	13	Level = 0–100; 200-232 for Scene Number = 0–32

Example AREA Messages

Operation	Command String
Execute: #AREA, Integration ID, Action Number, Parameters	
Set area level to 75% (Fade = 4 sec, Delay = 2 sec)	*#AREA,2,1,70,4,2*<CR><LF>
Lower Area.	*#AREA,2,3*<CR><LF>
Query: ?AREA, Integration ID, Action Number	
Is the area occupied?	*?AREA,2,8*<CR><LF>
What is the current active scene?	*?AREA,2,6*<CR><LF>
Response: ~AREA, Integration ID, Action Number, Parameters	
The area is currently occupied.	*~AREA,2,8,3*<CR><LF>
Area Scene 2 is currently active.	*~AREA,2,6,2*<CR><LF>

Continued on next page…

Quantum® System Commands *(continued)*

QSE-CI-NWK-E: AREA Commands *(continued)*

NOTES

1. AREA can only be used to control areas of a Quantum® system that have been assigned to a particular integration access point. Please refer to the Q-Design™ software (Integration Tab) or Quantum® Integration Report for details of what areas are available for control and monitoring.
2. AREA commands cannot be sent to areas that contain other areas, such as a floor or an entire building.
3. The Level is accepted as a percentage.
4. The Fade and Delay time are optional. When not used the system will use a one second fade time with zero second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours.
5. Fractional seconds “SS.ss” will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.45 seconds a value of 1.25 seconds will be used.
6. When a Raise/Lower command is issued, the area’s level will continue to go towards high end/low end until a Stop command is received.
7. Scene 0 is the Off Scene.
8. If After Hours is used in an area, setting the area’s Occupancy Mode to “Occupancy and Vacancy” or “Vacancy” will activate After Hours.
9. The area will report “Not Applicable” as its Occupancy Mode if the area does not have occupancy sensors and if After Hours is not used.

Quantum® System Commands *(continued)*

QSE-CI-NWK-E: SHADEGRP Commands

SHADEGRP Command Formats

Operation — *Integration ID (example)*

#SHADEGRP[1], 2, Action Number, Parameters

Command — *Use "SHADEGRP Command-specific fields" tables to complete these command fields.*

SHADEGRP Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Shade Group Level	1	Level[2] = 0–100 or 0.00–100.00, Delay[3] in: SS.ss[4], SS, MM:SS, or HH:MM:SS
Start Raising[5]	2	None
Start Lowering[5]	3	None
Stop Raising/Lowering	4	None
Set or Get Current Preset	6	Preset Number[6] = 0–30

Example SHADEGRP Messages

Operation	Command String
Execute: #SHADEGRP, Integration ID, Action Number, Parameters	
Set shade group to 70% (Delay = 2 sec)	*#SHADEGRP,2,1,70,2*<CR><LF>
Lower shade group.	*#SHADEGRP,2,3*<CR><LF>
Query: ?SHADEGRP, Integration ID, Action Number	
What is the current active preset?	*?SHADEGRP,2,6*<CR><LF>
Response: ~SHADEGRP, Integration ID, Action Number, Parameters	
Shade group Preset 2 is currently active.	*~SHADEGRP,2,6,2*<CR><LF>

NOTES

1. SHADEGRP can only be used to control shade groups of a Quantum® system that have been assigned to a particular integration access point. Please refer to the Q-Design™ software (Integration Tab) or Quantum® Integration Report for details of what shade groups are available for control and monitoring.
2. The Level is accepted as a percentage, where 100% is fully open and 0% is fully closed.
3. The Delay time is optional. When not used the system will use a zero second delay. The minimum delay time is 0 seconds. The maximum delay time is 4 hours.
4. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a delay time is specified as 1.45 seconds a value of 1.25 seconds will be used.
5. When a Raise/Lower command is issued, the shade group's level will continue to go towards open/close until a Stop command is received.
6. Preset 0 is the Open Preset and Preset 30 is the Closed Preset.

Quantum® System Commands *(continued)*

QSE-CI-NWK-E: OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*

#OUTPUT[1], 2, Action Number, Parameters

Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Output Level	1	Level[2] = 0–100 or 0.00–100.00 Fade[3] in: SS.ss[4], SS, MM:SS, or HH:MM:SS Delay[3] in: SS.ss[4], SS, MM:SS, or HH:MM:SS
Start Raising[5]	2	None
Start Lowering[5]	3	None
Stop Raising/Lowering[5]	4	None
Pulse	6	Pulse[6] time in: SS.ss[4], SS, MM:SS, or HH:MM:SS, or Delay[3] in: SS.ss[4], SS, MM:SS, or HH:MM:SS
Set DMX color/level settings[7]	17	Color/level index: 0–255 0.00–100.00[6]
Motor Jog Raise[7]	18	None[8]
Motor Jog Lower[7]	19	None[8]
Motor 4-Stage Jog Raise[7]	20	None[8]
Motor 4-Stage Jog Lower[7]	21	None[8]

NOTES

1. OUTPUT commands can be used to control system lighting zones, contact closed outputs and AC Motor Loads.
2. The Level is taken as a percentage.
3. The Fade and Delay time are optional. When not used the system will use a one second fade time with zero second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours. For shade outputs, the Fade parameter has no effect (since shades have fixed speeds) but it is required when specifying an optional delay.
4. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.45 seconds a value of 1.25 seconds will be used.
5. When a Raise/Lower command is issued, the output's level will continue to go towards high end/low end until a Stop command is received.
6. The default time is one second.
7. Not supported in RadioRA® 2.
8. Quantum® 2.5 and up.

Quantum® System Commands *(continued)*

QSE-CI-NWK-E: OUTPUT Commands

OUTPUT Command Format

Operation — *Integration ID (example)*

#OUTPUT[1],2, Action Number, Parameters

Command — *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

Example OUTPUT Messages

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set output level to 70% (Fade = 4 sec, Delay = 2 sec)	*#OUTPUT,2,1,70,4,2*<CR><LF>
Raise Output	*#OUTPUT,2,2*<CR><LF>
Query: ?OUTPUT, Integration ID	
What is the current output level?	*?OUTPUT,2*<CR><LF>
Response: ~OUTPUT, Integration ID, Action Number, Parameters[2]	
Output level is set to 48%.	*~OUTPUT,2,1,48*<CR><LF>

NOTES

1. OUTPUT commands can be used to control system lighting zones, contact closed outputs and AC Motor Loads.
2. The Fade and Delay time are optional. When not used the system will use a one second fade time with zero second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours. For shade outputs, the Fade parameter has no effect (since shades have fixed speeds) but it is required when specifying an optional delay.

Quantum® System Commands *(continued)*

QSE-CI-NWK-E: SYSVAR Commands[1]

SYSVAR Command Formats

Operation
|
#SYSVAR,2,Action Number, Parameters
|
Command

Use "SYSVAR Command-specific fields" tables to complete these command fields.

SYSVAR Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) the state of a given variable	1	State number

Example SYSVAR Messages

Operation	Command String
Execute: #SYSVAR, Integration ID, Action Number, Parameters	
Set the variable state to the third state	*#SYSVAR,2,1,3*<CR><LF>
Query: ?SYSVAR, Integration ID, Action Number	
What is the state of the variable?	*?SYSVAR,2,1*<CR><LF>
Response: ~SYSVAR, Integration ID, Action Number, Parameters	
The variable is in the third state.	*~SYSVAR,2,1,3*<CR><LF>

NOTES

1. SYSVAR Commands only available on Quantum® version 2.5 or higher.

HomeWorks® QS - System Overview

HomeWorks® QS is Lutron's premier total home control system. It allows control and monitoring of lights, shades, HVAC, sensors and appliances. The HomeWorks® QS system includes QS devices, RF devices and power panels that provide solutions for new construction and retrofit projects of any size.

HomeWorks® QS (HomeWorks® QS) System Device Compatibility Index:

	HomeWorks QS®
HomeWorks® QS RF and Wired seeTouch® Keypads	✓
Sivoia® QS and RF Shades	✓
HomeWorks® QS RF and Wired Maestro® Controls	✓
HomeWorks® QS Hybrid Keypad	✓
HomeWorks® QS Dynamic Keypad	✓
HomeWorks® QS Tabletop seeTouch® Keypad	✓
HVAC Controller	✓
HomeWorks® QS Plug-in Modules	✓
HomeWorks® QS Visor Control Receiver	✓
QS Input/Output Interface	✓
HomeWorks® QS Wallbox Power Module	✓
GRAFIK Eye® QS	✓
Pico® Wireless Controls	✓
Radio Powr Savr™ Sensors	✓
Remote Power Modules	✓
Int'l Adaptive Power Module	✓
Int'l with EcoSystem® Adaptive Power Module	✓
Int'l DALI® Power Module	✓
Int'l 0-10V/Switching Power Module	✓
Int'l Motor Module	✓

HomeWorks® QS - System Overview *(continued)*

Command Types

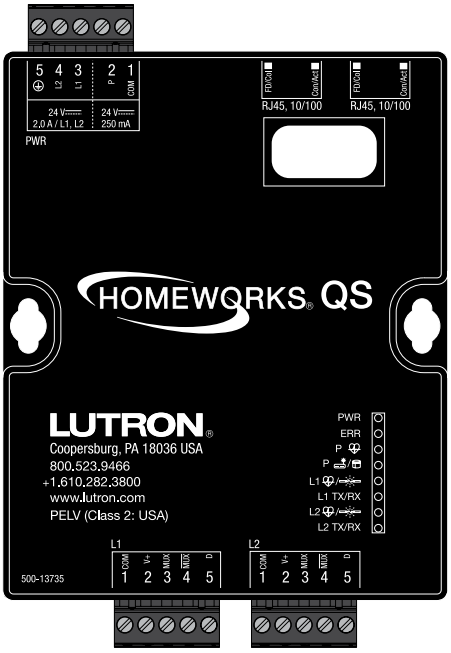
The following is a list of supported command types. Details on certain device specific types (e.g. DEVICE, HVAC) are located in the individual device section of this manual.

Operation characters will be followed by command types.

- **DEVICE –** Allows control and monitoring of device inputs such as button presses and contact closure inputs
- **OUTPUT –** Allows control and monitoring of device outputs such as dimmers and contact closure outputs
- **SHADEGRP –** Allows control of shades in the HomeWorks® QS system. Shade groups are collection of shades that operate in unison
- **MONITORING –** Specifies the type of messages that the system will report
- **HVAC –** Allows control and monitoring of Lutron® HVAC equipment
- **TIMECLOCK –** Allows control (enable/disable) and monitoring of system timeclocks
- **SYSVAR –** Allows control and monitoring of system variables
- **AREA –** Allows control and monitoring of an area. This includes activating area Scenes, monitoring occupancy, etc
- **ERROR –** Displays responses to invalid commands
- **HELP –** Displays usage information for the supported commands and their corresponding actions
- **SYSTEM –** Allows setting and controlling system parameters and variables
- **ETHERNET –** Modifies the Ethernet configuration of the HomeWorks® QS processor
- **INTEGRATIONID –** Get information of the integration id or serial number of a device
- **RESET –** Resets the HomeWorks® QS processor

HomeWorks® QS Integration Access Points
HomeWorks® QS Processor

Model: HQP6-2



Why Integrate with a HomeWorks® QS Processor?

- Integrating with a HomeWorks® QS Processor provides integration over Ethernet without the need for additional equipment or interfaces.
- RS-232 integration can also be accomplished using third party Ethernet to RS-232 adapters.
- Integrating directly with the HomeWorks® QS Processor also provides the greatest bandwidth port into the HomeWorks® QS system.
- Integration IDs are automatically generated by the HomeWorks® QS software application (e.g. for devices, outputs, shadegroups, timeclocks, etc). Integration IDs can be removed to reduce processing and traffic of unwanted messages.
- Phantom Keypads allow for integration functionality to be organized on various virtual keypads that have unlimited buttons and do not count towards link device count limits.

Integration Capabilities

- Control and monitoring of output devices such as dimmers, the GRAFIK Eye®, shades and contact closure outputs
- Control and monitoring of physical or phantom keypad buttons and button status LEDs
- Control and monitoring of Lutron® HVAC equipment
- Control and monitoring of individual timeclocks
- Control and monitoring of state variables
- Monitoring of occupancy sensors
- Control and monitoring of areas to activate scenes and monitor occupancy

HomeWorks® QS Integration Access Points *(continued)*

Connection Information

Ethernet

Configuring the HomeWorks® QS processor to communicate over a network takes not only knowledge of the HomeWorks® QS system, but of networking as well. Installers with limited networking knowledge are advised to contact a networking professional before attempting to connect a HomeWorks® QS processor through a network.

The installer will make any necessary configuration changes to the HomeWorks® QS processor using the HomeWorks® QS Design Software Application and the network professional can make any necessary changes to the networking equipment.

Dual Ethernet Port

- IEEE® 802.3 Auto-Sensing 10BaseT/100BaseTX
- Supports MDI/MDIX auto-crossover (no crossover cable needed).
- Female 8P8C “Computer RJ-45” socket
- Green "Connect" LED, Amber "Activity" LED
- Use Cat 5 cabling or better
- 2 Port 10/100 Ethernet Switch

TCP/IP Settings

- IP Address: Address at which the processor can be reached for integration. In most instances when integrating to a processor, DHCP should be disabled and a static IP address should be assigned to prevent the processor from changing IP addresses.
- Subnet Mask: In conjunction with the IP address, it defines the subnet on which the processor communicates. Processors will only be able to integrate with devices on the same subnet.
- Gateway: Used in instances where the processor needs to communicate to the internet. Should be set to the IP address of the device on the network connected directly to the internet — typically the home router.

Protocols Used for Integration

- TELNET

Telnet Server

- Used by third party equipment (e.g. touch screen)
- Used by Lutron® mobile devices (e.g. *iPad* and *iPhone*)
- Limited to transferring ASCII characters
- Telnet Port number is 23
- Logins: Defined in the HomeWorks® QS software application

RS232

The HomeWorks® QS Processor does not have native support for RS232. An Ethernet to RS232 adapter can be used and configured to provide RS232 integration directly from the Processor if needed.

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HomeWorks® QS System Commands

HQP6-2: OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*

#OUTPUT[1], 2, Action Number, Parameters

Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Set (#) or Get (?) Output Level	1	Level[2] = 0–100 or 0.00–100.00 Fade[3] in: SS.ss[4], SS, MM:SS, or HH:MM:SS Delay[3] in: SS.ss[4], SS, MM:SS, or HH:MM:SS
Start Raising[5]	2	None
Start Lowering[5]	3	None
Stop Raising/Lowering[5]	4	None
Flash (#) or Get (?) Flash Frequency	5	Fade[3] in: SS.ss[4], SS, MM:SS, or HH:MM:SS Delay[3] in: SS.ss[4], SS, MM:SS, or HH:MM:SS
Set Pulse CCO (#)	6	Pulse[6] time in: SS.ss[4], SS, MM:SS, or HH:MM:SS, or Delay[3] in: SS.ss[4], SS, MM:SS, or HH:MM:SS
Set (#) Venetian Shade Tilt to a specified level	9	Tilt level in % = 0.00-100 Fade[3] in: SS.ss[4], SS, MM:SS, or HH:MM:SS Delay[3] in: SS.ss[4], SS, MM:SS, or HH:MM:SS
Set (#) Venetian Shade Tilt and Lift to a specified level	10	Lift[2] = 0–100 or 0.00–100.00, Tilt[2] = 0–100 or 0.00–100.00, Fade[3] in: SS.ss[4], SS, MM:SS, or HH:MM:SS Delay[3] in: SS.ss[4], SS, MM:SS, or HH:MM:SS
Raise (#) Tilt Output Level	11	None
Lower (#) Tilt Output Level	12	None
Stop (#) Raise/Lower Tilt Output Level	13	None
Raise(#) Lift Output Level	14	None
Lower(#) Lift Output Level	15	None
Stop (#) Raise/Lower Lift Output Level	16	None

NOTES

1. OUTPUT commands can be used to control system lighting zones, individual shades, and contact closed outputs.
2. The Level/Lift/Tilt is taken as a percentage.
3. The Fade and Delay time are optional. When not used the system will use a one second fade time with zero second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours. For shade outputs, the Fade parameter has no effect (since shades have fixed speeds) but it is required when specifying an optional delay.
4. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.45 seconds a value of 1.25 seconds will be used.
5. When a Raise/Lower command is issued, the output's level will continue to go towards high end/low end until a Stop command is received.
6. The default time is one second.

HomeWorks® QS System Commands *(continued)*

HQP6-2: OUTPUT Commands *(continued)*

Example OUTPUT Messages

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set output level to 70% (Fade = 4 sec, Delay = 2 sec)	*#OUTPUT,2,1,70,4,2*<CR><LF>
Raise Output	*#OUTPUT,2,2*<CR><LF>
Query: ?OUTPUT, Integration ID	
What is the current output level?	*?OUTPUT,2*<CR><LF>
Response[3]**:** ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 48%.	*~OUTPUT,2,1,48*<CR><LF>

NOTES

1. OUTPUT commands can be used to control system lighting zones, individual shades, and contact closed outputs.
2. The Level/Lift/Tilt is taken as a percentage.
3. The Fade and Delay time are optional. When not used the system will use a one second fade time with zero second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours. For shade outputs, the Fade parameter has no effect (since shades have fixed speeds) but it is required when specifying an optional delay.
4. Fractional seconds “SS.ss” will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.45 seconds a value of 1.25 seconds will be used.
5. When a Raise/Lower command is issued, the output’s level will continue to go towards high end/low end until a Stop command is received.
6. The default time is one second.

HomeWorks® QS System Commands *(continued)*

HQP6-2: SHADEGRP Commands

SHADEGRP Command Formats

Operation *Integration ID (example)*

#SHADEGRP[1], 2, Action Number, Parameters

Command *Use "SHADEGRP Command-specific fields" tables to complete these command fields.*

SHADEGRP Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Shade Group Level[6]	1	Level[2] = 0–100 or 0.00–100.00 Delay[2] in: SS.ss[3], SS, MM:SS, or HH:MM:SS
Start Raising[4]	2	None
Start Lowering[4]	3	None
Stop Raising/Lowering	4	None
Set (#) or Get (?) Current Preset	6	Preset Number[5] = 0–30
Set (#) Venetian Tilt	14	Level[1] = 0–100 or 0.00–100.00, Fade[2] in: SS.ss[3], SS, MM:SS, or HH:MM:SS Delay[2] in: SS.ss[3], SS, MM:SS, or HH:MM:SS
Set (#) Lift and Tilt for venetians	15	Lift[1] = 0–100 or 0.00–100.00, Tilt[1] = 0–100 or 0.00–100.00, Fade[2] in: SS.ss[3], SS, MM:SS, or HH:MM:SS Delay[2] in: SS.ss[3], SS, MM:SS, or HH:MM:SS
Raise Venetian Tilt[4]	16	None
Lower Venetian Tilt[4]	17	None
Stop Venetian Tilt[4]	18	None
Raise Venetian Lift[4]	19	None
Lower Venetian Lift[4]	20	None
Stop Venetian Lift[4]	21	None

NOTES

1. The Level is accepted as a percentage, where 100% is fully open and 0% is fully closed.
2. The Fade and Delay time are optional. For shades, the Fade parameter has no effect (since shades have fixed speeds) but it is required when specifying an optional delay. When not used, the system will use a zero second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours.
3. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a delay time is specified as 1.45 seconds, a value of 1.25 seconds will be used.
4. When a Raise/Lower command is issued, the shade group's level will continue to go towards open/close until a Stop command is received.
5. Preset 0 is the Open Preset and Preset 30 is the Closed Preset.
6. Get (?) Shade Group Level (action number 1).

HomeWorks® QS System Commands *(continued)*

HQP6-2: SHADEGRP Commands *(continued)*

Example SHADEGRP Messages

Operation	Command String
Execute: #SHADEGRP, Integration ID, Action Number, Parameters	
Set shade group to 70% (Delay = 2 sec).	*#SHADEGRP,2,1,70,2*<CR><LF>
Lower shade group.	*#SHADEGRP,2,3*<CR><LF>
Query: ?SHADEGRP, Integration ID, Action Number	
What is the current active preset?	*?SHADEGRP,2,6*<CR><LF>
Response: ~SHADEGRP, Integration ID, Action Number, Parameters	
Shade group Preset 2 is currently active.	*~SHADEGRP,2,6,2*<CR><LF>

HomeWorks® QS System Commands *(continued)*

HQP6-2: TIMECLOCK Commands

TIMECLOCK Command Formats

Operation
|
#TIMECLOCK,2,Action Number, Parameters
|
Command *Use "TIMECLOCK Command-specific fields" tables to complete these command fields.*

TIMECLOCK Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Get (?) Sunrise Time	2	None
Get (?) Sunset Time	3	None
Get (?) Day's Schedule	4	None
Execute (#) event	5	Index of the event to test. The index number of the first event is 1; the second event is 2, and so on.

Example TIMECLOCK Messages

Operation	Command String
Execute: #TIMECLOCK, Integration ID, Action Number, Parameters	
Execute the 3rd event of the timeclock.	*#TIMECLOCK,2,5,3*<CR><LF>
Query: ?TIMECLOCK, Integration ID, Action Number	
What is the sunrise time?	*?TIMECLOCK,2,2*<CR><LF>
Response: ~TIMECLOCK, Integration ID, Action Number, Parameters	
The time the sun rises.	*~TIMECLOCK,2,2,05:32*<CR><LF>

HomeWorks® QS System Commands *(continued)*

HQP6-2: SYSVAR Commands

SYSVAR Command Formats

Operation
|
#SYSVAR,2,Action Number, Parameters
|
Command

Use "SYSVAR Command-specific fields" tables to complete these command fields.

SYSVAR Command-specific fields

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Set (#) or Get (?) the state of a given variable	1	State number

Example SYSVAR Messages

Operation	Command String
Execute: #SYSVAR, Integration ID, Action Number, Parameters	
Set the variable state to the third state.	*#SYSVAR,2,1,3*<CR><LF>
Query: ?SYSVAR, Integration ID, Action Number	
What is the state of the variable?	*?SYSVAR,2,1*<CR><LF>
Response: ~SYSVAR, Integration ID, Action Number, Parameters	
The variable is in the third state.	*~SYSVAR,2,1,3*<CR><LF>

HomeWorks® QS System Commands *(continued)*

HQP6-2: AREA Commands

AREA Command Formats

Operation *Integration ID (example)*

#AREA[1], 2, Action Number, Parameters

Command *Use "AREA Command-specific fields" tables to complete these command fields.*

AREA Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Get (?) Occupancy State	8	3 = Occupied 4 = Unoccupied

Example AREA Messages

Operation	Command String
Execute: #AREA, Integration ID, Action Number, Parameters	
Set area level to 75% (Fade = 4 sec, Delay = 2 sec)	*#AREA,2,1,70,4,2*<CR><LF>
Lower Area.	*#AREA,2,3*<CR><LF>
Query: ?AREA, Integration ID, Action Number	
Is the area occupied?	*?AREA,2,8*<CR><LF>
What is the current active scene?	*?AREA,2,6*<CR><LF>
Response: ~AREA, Integration ID, Action Number, Parameters	
The area is currently occupied.	*~AREA,2,8,3*<CR><LF>
Area Scene 2 is currently active.	*~AREA,2,6,2*<CR><LF>

NOTE

1. AREA commands cannot be sent to areas that contain other areas, such as a floor or an entire building.

HomeWorks® QS System Commands *(continued)*

HQP6-2: ETHERNET Commands

ETHERNET Command Formats

Operation

#ETHERNET, Configuration Number, Parameters

Command *Use "ETHERNET Command-specific fields" tables to complete these command fields.*

ETHERNET Command-specific fields

Configuration Number and **Parameters:**

Description	Configuration Number	Parameters
Get (?) or Set(#) IP Address	0	IP Address (XXX.XXX.XXX.XXX)
Get (?) or Set (#) Gateway Address	1	IP Address (XXX.XXX.XXX.XXX)
Get (?) or Set (#) Subnet Mask	2	IP Address (XXX.XXX.XXX.XXX)
Get (?) DHCP	4	None
Get (?) or Set (#) Multicast Address	5	IP Address (XXX.XXX.XXX.XXX)

Example ETHERNET Commands

Operation	Command String
Execute: #ETHERNET, Configuration Number, Parameters	
Set IP Address to 192.168.250.1	*#ETHERNET,0,192.168.250.1*<CR><LF>
Set Gateway Address to 10.2.4.1	*#ETHERNET,1,10.2.4.1*<CR><LF>
Query: ?ETHERNET, Configuration Number, Parameters	
What is the IP Address?	*?ETHERNET,0*<CR><LF>
Response: ~DEVICE, Integration ID, Configuration Number, Parameters	
The IP Address is 192.168.250.1	*~ETHERNET,0=,192.168.250.1*<CR><LF>

HomeWorks® QS System Commands *(continued)*

HQP6-2: INTEGRATION ID Commands

INTEGRATION ID Command Formats

Operation

#INTEGRATIONID, Action Number, Parameters

Command *Use "INTEGRATIONID Command-specific fields" tables to complete these command fields.*

INTEGRATION ID Command-specific fields

Action Numbers and **Parameters:**

Description	Action Number	Parameters
Get (?) Integration ID for a Serial Number	1	Serial Number = 8 character HEX serial number of the device, Integration ID = The integration ID to be assigned.
Get (?) Info from ID	3	Integration ID **NOTE:** If this field is left blank, all integration IDs will be printed.

Example INTEGRATION ID Commands

Operation	Command String
Query: ?INTEGRATIONID, Action Number, Parameters	
Get the Integration ID for a serial number	*?INTEGRATIONID,1,5678EFEF*<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Get the Integration ID for a serial number	*~INTEGRATIONID,1,5678EFEF,1*<CR><LF>
Query: ?INTEGRATIONID, Action Number, Parameters	
Get information about an Integration ID command	*?INTEGRATIONID,3,1*<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Get information about an Integration ID command	*~INTEGRATIONID,3,1,DEVICE,5678EFEF*<CR><LF>

HomeWorks® QS System Commands *(continued)*

HQP6-2: RESET Commands

RESET Command Formats

Operation

#RESET, Action Number

Command *Use "RESET Command-specific fields" tables to complete these command fields.*

RESET Command-specific fields

Action Numbers:

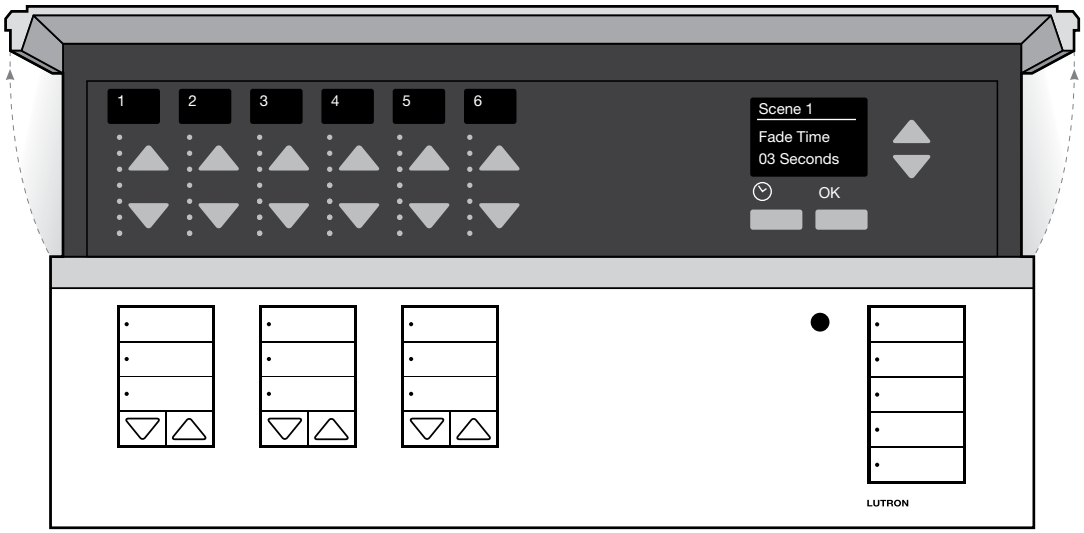
Action	Action Number
Resets the HomeWorks® QS processor	0

Example RESET Commands

Operation	Command String
Execute: #RESET, Action Number	
Reset the HomeWorks® QS processor	*#RESET,0*<CR><LF>

GRAFIK Eye® QS Main Unit

Models: QSGR-, QSGRJ-, QSGRK-, QSGRM-, QSGRN-, QSGRQ-



Why Integrate with a GRAFIK Eye® QS?

- Control individual lights and scenes
- Query current scene and light levels
- Control LEDs of unprogrammed buttons

Integration Capabilities

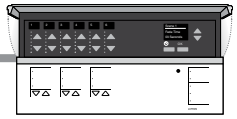
- 16 scenes and up to 24 controllable outputs (output count depends on model)

Supported Command Types

- **DEVICE** allows control and monitoring of buttons, LEDs and scenes
- **OUTPUT** allows control and monitoring of the dimmer device output

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
GRAFIK Eye® QS Main Unit	✓	✓	✓	✓	



GRAFIK Eye® QS: DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*

#DEVICE, 5, Component Number, Action Number, Parameters

Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Zone 1 Controller - Zone 24 Controller	1-24	Raise, Lower, Stop, Set Light Level
Scene 1 Button	70	Press, Release (Scenes Activate on "Press")
Scene 2 Button	71	Press, Release (Scenes Activate on "Press")
Scene 3 Button	76	Press, Release (Scenes Activate on "Press")
Scene 4 Button	77	Press, Release (Scenes Activate on "Press")
Scene Off Button	83	Press, Release
Shade Column 1 Open	38	Press, Release (Shades React on "Release")
Shade Column 1 Preset 1	39	Press, Release (Shades React on "Release")
Shade Column 1 Close	40	Press, Release (Shades React on "Release")
Shade Column 1 Lower	41	Press, Release (Shades React on "Release")
Shade Column 1 Raise	47	Press, Release (Shades React on "Release")
Shade Column 2 Open	44	Press, Release (Shades React on "Release")
Shade Column 2 Preset 1	45	Press, Release (Shades React on "Release")
Shade Column 2 Close	46	Press, Release (Shades React on "Release")
Shade Column 2 Lower	52	Press, Release (Shades React on "Release")
Shade Column 2 Raise	53	Press, Release (Shades React on "Release")
Shade Column 3 Open	50	Press, Release (Shades React on "Release")
Shade Column 3 Preset 1	51	Press, Release (Shades React on "Release")
Shade Column 3 Close	56	Press, Release (Shades React on "Release")
Shade Column 3 Lower	57	Press, Release (Shades React on "Release")
Shade Column 3 Raise	58	Press, Release (Shades React on "Release")
Scene Controller	141	Set Current Scene, Set Zone Lock, Set Scene Lock, Set Sequence State, Raise, Lower, Stop
Scene 1 LED	201	Get (?) LED state
Scene 2 LED	210	Get (?) LED state
Scene 3 LED	219	Get (?) LED state
Scene 4 LED	228	Get (?) LED state
Scene Off LED	237	Get (?) LED state

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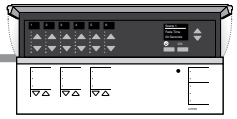


GRAFIK Eye® QS: DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Component Numbers:

Component	Component Number	Available Actions
Shade Column 1 Open LED	174	Get (?) LED state
Shade Column 1 Preset 1 LED	175	Get (?) LED state
Shade Column 1 Close LED	211	Get (?) LED state
Shade Column 2 Open LED	183	Get (?) LED state
Shade Column 2 Preset 1 LED	184	Get (?) LED state
Shade Column 2 Close LED	220	Get (?) LED state
Shade Column 3 Open LED	192	Get (?) LED state
Shade Column 3 Preset 1 LED	193	Get (?) LED state
Shade Column 3 Close LED	229	Get (?) LED state

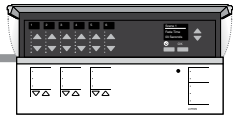
Action Numbers and Parameters:

Action	Action Number	Parameters
Press	3	None
Release	4	None
Set Current Scene[6,7]	7	Scene
Set (#) or Get (?) LED State[3]	9	0 = Off 1 = On 2 = Normal-Flash: 1 flash every second[7] 3 = Rapid-Flash: 10 flashes every second[7]
Set Light Level[8,9]	14	Level = 0–100 or 0.00–100.00 Fade[2] in: SS.ss[1], SS, MM:SS, or HH:MM:SS Delay[2,5] in: SS.ss[1], SS, MM:SS, or HH:MM:SS
Set Zone Lock[4]	15	0 = Off; 1 = On
Set Scene Lock[4]	16	0 = Off; 1 = On
Set Sequence State[4]	17	0 = Off 1 = Sequence through Scenes 1–4 2 = Sequence through Scenes 5–16
Start Raising[8,9]	18	None
Start Lowering[8,9]	19	None
Stop Raising/Lowering[8,9]	20	None

NOTES

The number of zone controllers available matches the number of zones a particular model supports.

1. Fractional seconds “SS.ss” will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.
2. The Fade and Delay time are optional. When not used, the system will use a one second fade time with zero second delay.
3. Quantum® only. "Set" is for unprogrammed buttons only.
4. QS Standalone only.
5. Not supported in QS Standalone.
6. Not supported in HomeWorks® QS.
7. Not supported in RadioRA® 2.
8. Use OUTPUT command with equivalent command in RadioRA® 2.
9. Use OUTPUT command with equivalent command in HomeWorks® QS.



GRAFIK Eye® QS: OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*

#OUTPUT, 1, Action Number, Parameters

Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Set or Get Zone Level	1	Level = 0–100 or 0.00–100.00 Fade[2] in: SS.ss[1], SS, MM:SS, or HH:MM:SS Delay[2,3] in: SS.ss[1], SS, MM:SS, or HH:MM:SS
Start Raising	2	None
Start Lowering	3	None
Stop Raising/Lowering	4	None

Example OUTPUT Commands

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set dimmer to 75% with a 1 min 30 sec fade.	*#OUTPUT,1,1,75,01:30*<CR><LF>
Start Raising zone level.	*#OUTPUT,1,2*<CR><LF>
Stop Raising/Lowering zone level.	*#OUTPUT,1,4*<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	*?OUTPUT,1,1*<CR><LF>
Response[4]: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 90%.	*~OUTPUT,1,1,90.00*<CR><LF>

NOTES

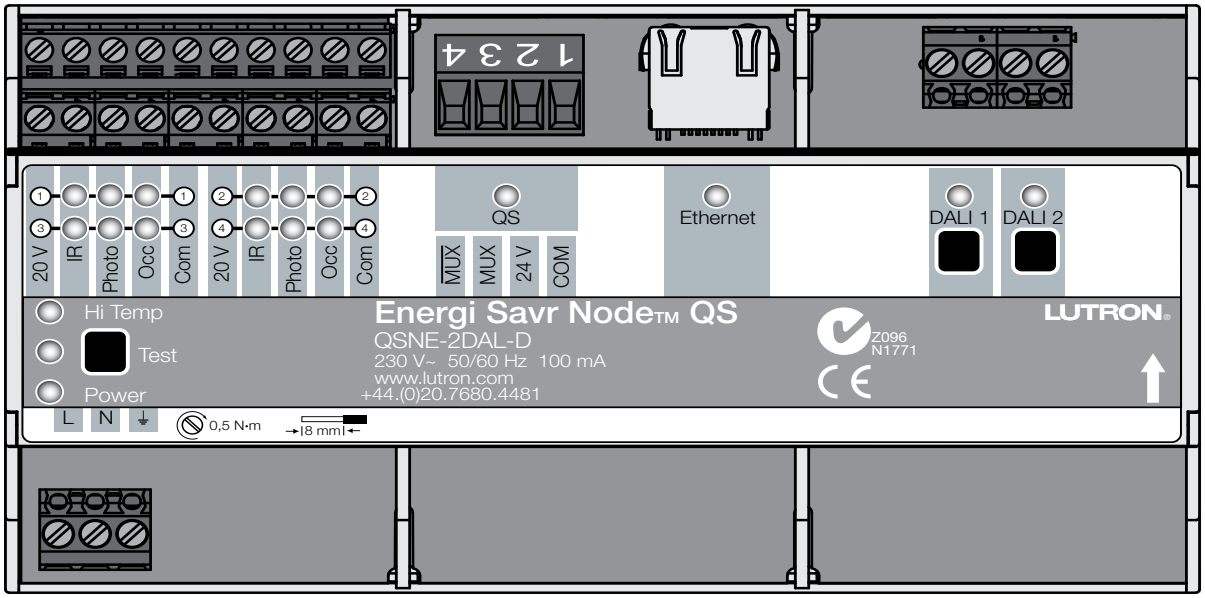
1. Fractional seconds "SS.ss" will be rounded down to the nearest quarter sec. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.
2. The Fade and Delay time are optional. When not used the system will use a one second fade time with zero second delay.
3. Not supported in QS Standalone.
4. The system will report the target level of a dimmer while it is fading from one level to another. The actual level is not transmitted while dimming between levels. Example: If the "Over Sink" (Integration ID - 1) dimmer is at 20% and is then commanded to go to 100% by sending *#OUTPUT,1,1,100* the response from the system will be *~OUTPUT,1,1,100.00*

Energi Savr Node™ QS for DALI®

QS Model: QSNE-2DAL-D

HomeWorks® QS Model: LQSNE-2DAL-D

QSNE-2DAL-D



Why Integrate with an Energi Savr Node™ (ESN)?

- Control individual zones and scenes in an area
- Query current scene and light levels

Integration Capabilities

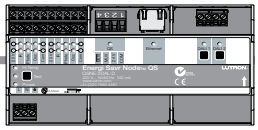
- Up to 32 areas with 16 scenes per area. Up to 32 zones across the two DALI buses

Supported Command Types

- **DEVICE** allows control and monitoring of zone levels and area scenes
- **OUTPUT** allows control and monitoring of the dimmer device output

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
ESN QS for DALI	✓	✓		✓	



Energi Savr Node™ QS for DALI®:
DEVICE Commands[5]

DEVICE Command Formats

Operation *Integration ID (example)*

#DEVICE, 5, Component Number, Action Number, Parameters

Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Zone 1–Zone 32 [1,2,3]	201–232	Set or Get Light Level, Raise, Lower, Stop
Area 1–Area 32 [1,3]	401–432	Set or Get Scene, Set Light Level, Raise, Lower, Stop

NOTES

1. Zones and areas are created and configured using the Lutron® ESN Configuration Tool on an *iPhone* or *iPod Touch* mobile device, the Quantum® Q-Design™ Tool, or the HomeWorks® QS Lutron® Designer. Only those areas and zones which have been configured using one of these tools are accessible through integration.
2. Assigned zones can be given an individual Integration ID and controlled using the *#OUTPUT* command. For more details on setting the output Integration ID of a zone component, see the Integration Access Point section of the system that contains the ESN.
3. When the ESN is part of a Quantum® system, then the *#AREA* and *#OUTPUT* commands found in the Quantum® "System Commands" section of this integration document should be used.

DEVICE Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set or Get Current Scene	7	Scene
Set or Get Light Level	14	Level = 0–100 or 0.00–100.00 Fade[2] in: SS.ss[1], SS, MM:SS, or HH:MM:SS Delay[2,3] in: SS.ss[1], SS, MM:SS, or HH:MM:SS
Set Scene Lock[4]	16	0 = Off; 1 = On
Set Sequence State[4]	17	0 = Off; 1 = Sequence through Scenes 1–4; 2 = Sequence through Scenes 5–16
Start Raising	18	None
Start Lowering	19	None
Stop Raising/Lowering	20	None

NOTES

1. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.
2. The Fade and Delay time are optional. When not used, the system will use a one second fade time with zero second delay.
3. Not supported in QS Standalone.
4. QS Standalone only.
5. Not Supported in HomeWorks® QS.

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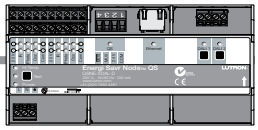


Energi Savr Node™ QS for DALI®:
OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*

#OUTPUT, 1, Action Number, Parameters

Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set or Get Zone Level	1	Level = 0–100 or 0.00–100.00 Fade[2] in: SS.ss[1], SS, MM:SS, or HH:MM:SS Delay[2,3] in: SS.ss[1], SS, MM:SS, or HH:MM:SS
Start Raising	2	None
Start Lowering	3	None
Stop Raising/Lowering	4	None

Example OUTPUT Commands

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set dimmer to 75% with a 1 min 30 sec fade.	*#OUTPUT,1,1,75,01:30*<CR><LF>
Start Raising zone level.	*#OUTPUT,1,2*<CR><LF>
Stop Raising/Lowering zone level.	*#OUTPUT,1,4*<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	*?OUTPUT,1,1*<CR><LF>
Response[4]: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 90%.	*~OUTPUT,1,1,90.00*<CR><LF>

NOTES

1. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.
2. The Fade and Delay time are optional. When not used the system will use a one second fade time with zero second delay.
3. Not supported in QS Standalone.
4. The system will report the target level of a dimmer while it is fading from one level to another. The actual level is not transmitted while dimming between levels. Example: If the "Over Sink" (Integration ID - 1) dimmer is at 20% and is then commanded to go to 100% by sending *#OUTPUT,1,1,100* the response from the system will be *~OUTPUT,1,1,100.00*

Energi Savr Node™ QS with EcoSystem®

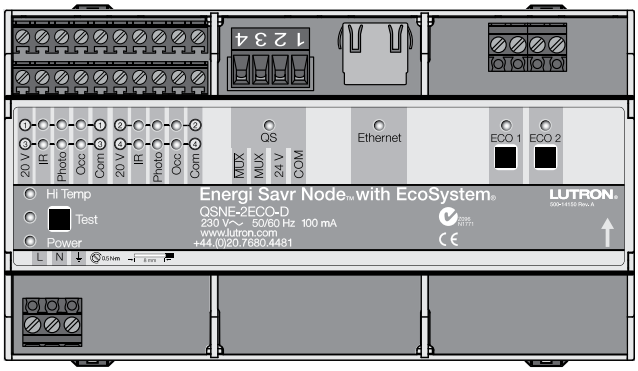
Model: QSN-2ECO-S

Energi Savr Node™ QS with International EcoSystem®

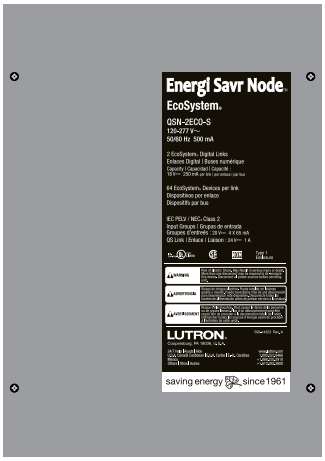
QS Model: QSNE-2ECO-D

HomeWorks® QS Model: LQSE-2ECO-D

QSNE-2ECO-D



QSN-2ECO-S



Why Integrate with an Energi Savr Node™?

- Control individual zones and scenes in an area
- Query current scene and light levels

Integration Capabilities

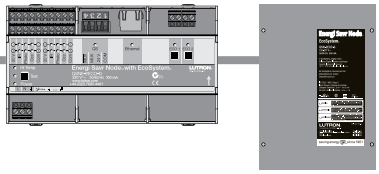
- Up to 100 areas with 16 scenes per area. Up to 100 zones across the two EcoSystem® loops

Supported Command Types

- **DEVICE** allows control and monitoring of zone levels and area scenes
- **OUTPUT** allows control and monitoring of the dimmer device output

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
ESN QS with Int'l Ecosystem	✓	✓		✓	
ESN with EcoSystem®	✓	✓			



Energi Savr Node™ QS with EcoSystem®/International:
DEVICE Commands [5]

DEVICE Command Formats

Operation *Integration ID (example)*

#DEVICE, 5, Component Number, Action Number, Parameters

Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Zone 1–Zone 100 [1,2,3]	1001–1100	Set or Get Light Level, Raise, Lower, Stop
Area 1–Area 100 [1,3]	1201–1300	Set or Get Scene, Set Light Level, Raise, Lower, Stop

NOTES

1. Zones and areas are created and configured using the Lutron® ESN Configuration Tool on an *iPhone* or *iPod Touch* mobile device, the Quantum® Q-Design™ Tool, or the HomeWorks® QS Lutron® Designer. Only those areas and zones which have been configured using one of these tools are accessible through integration.
2. Assigned zones can be given an individual Integration ID and controlled using the *#OUTPUT* command. For more details on setting the output Integration ID of a zone component, see the Integration Access Point section of the system that contains the ESN.
3. When the ESN is part of a Quantum® or HomeWorks® QS system, then the *#AREA* and *#OUTPUT* commands found in the Quantum® "System Commands" section of this integration document should be used.

DEVICE Command-specific fields

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Set or Get Current Scene	7	Scene
Set or Get Light Level	14	Level = 0–100 or 0.00–100.00, Fade [2] in: SS.ss [1], SS, MM:SS, or HH:MM:SS Delay [2,3] in: SS.ss [1], SS, MM:SS, or HH:MM:SS
Set Scene Lock [4]	16	0 = Off; 1 = On
Set Sequence State [4]	17	0 = Off; 1 = Sequence through Scenes 1–4; 2 = Sequence through Scenes 5–16
Start Raising	18	None
Start Lowering	19	None
Stop Raising/Lowering	20	None

NOTES

1. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.
2. The Fade and Delay time are optional. When not used, the system will use a one second fade time with zero second delay.
3. Not supported in QS Standalone.
4. QS Standalone only.
5. Not Supported in HomeWorks® QS.

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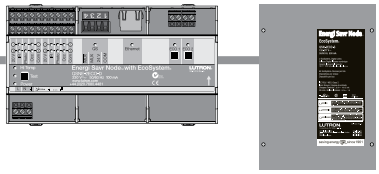


Energi Savr Node™ QS with EcoSystem®/International:
OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*

#OUTPUT, 1, Action Number, Parameters

Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Set or Get Zone Level	1	Level = 0–100 or 0.00–100.00, Fade[2] in: SS.ss[1], SS, MM:SS, or HH:MM:SS Delay[2,3] in: SS.ss[1], SS, MM:SS, or HH:MM:SS
Start Raising	2	None
Start Lowering	3	None
Stop Raising/Lowering	4	None

Example OUTPUT Commands

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set dimmer to 75% with a 1 min 30 sec fade.	*#OUTPUT,1,1,75,01:30*<CR><LF>
Start Raising zone level.	*#OUTPUT,1,2*<CR><LF>
Stop Raising/Lowering zone level.	*#OUTPUT,1,4*<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	*?OUTPUT,1,1*<CR><LF>
Response[4]: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 90%.	*~OUTPUT,1,1,90.00*<CR><LF>

NOTES

1. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.
2. The Fade and Delay time are optional. When not used the system will use a one second fade time with zero second delay.
3. Not supported in QS Standalone.
4. The system will report the target level of a dimmer while it is fading from one level to another. The actual level is not transmitted while dimming between levels.
   Example: If the "Over Sink" (Integration ID .- 1) dimmer is at 20% and is then commanded to go to 100% by sending *#OUTPUT,1,1,100* the response from the system will be *~OUTPUT,1,1,100.00*

Energi Savr Node™ QS for International 0-10V/Switching

QS Models (QSNE-): 4T10-D, 4S10-D
HomeWorks® QS Models (LQSE-): 4T10-D, 4S10-D

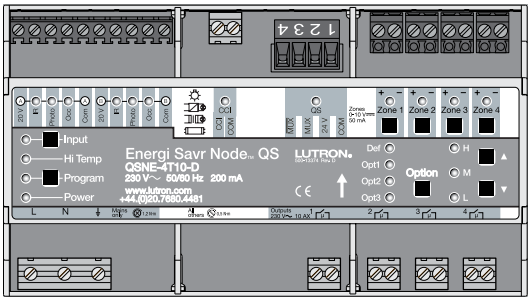
Energi Savr Node™ QS International Phase Adaptive

QS Model: QSNE-4A-D
HomeWorks® QS Model: LQSE-4A-D

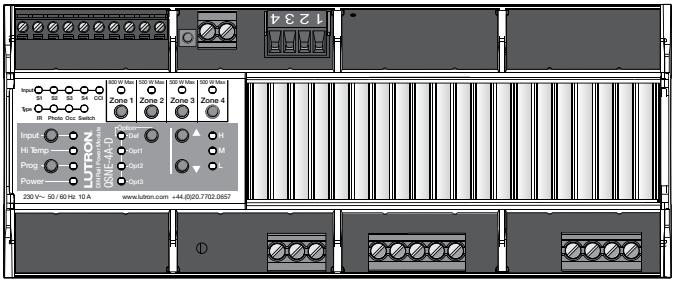
Energi Savr Node™ QS for 0-10V/Switching

Models (QSN-): 4T16-S, 4S16-S

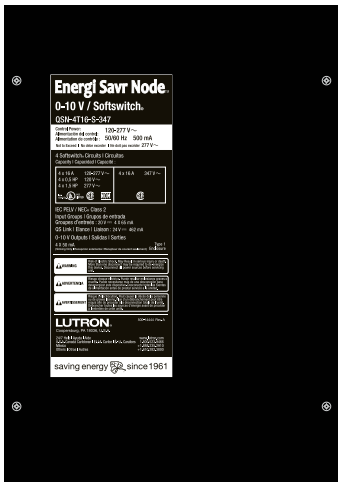
QSNE-4T10-D



QSNE-4A-D



QSN-4T16-S



Why Integrate with an Energi Savr Node™ (ESN)?

- Control individual zones and scenes in an area
- Query current scene and light levels

Integration Capabilities

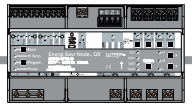
- Four areas with 16 scenes per area. Four zones on four independent outputs

Supported Command Types

- **DEVICE** allows control and monitoring of zone levels and area scenes
- **OUTPUT** allows control and monitoring of the dimmer device output

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
ESN Int'l 0-10V/Switching	✓	✓		✓	
ESN QS Int'l Phase Adaptive	✓	✓		✓	
ESN 0-10/Switching	✓	✓			



Energi Savr Node™ QS for International 0-10V / Switching:
DEVICE Commands [5]

DEVICE Command Formats

Operation — *Integration ID (example)*

#DEVICE, 5, Component Number, Action Number, Parameters

Command — *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Zone 1 – Zone 4 [1,2,3]	5–8	Set or Get Light Level, Raise, Lower, Stop
Area 1 – Area 4 [1,3]	10–13	Set or Get Scene, Set Light Level, Raise, Lower, Stop

NOTES

1. Zones and areas are created and configured using the Lutron® ESN Configuration Tool on an *iPhone* or *iPod Touch* mobile device, the Quantum® Q-Design™ Tool, or the HomeWorks® QS Lutron® Designer. Only those areas and zones which have been configured using one of these tools are accessible through integration.
2. Assigned zones can be given an individual Integration ID and controlled using the *#OUTPUT* command. For more details on setting the output Integration ID of a zone component, see the Integration Access Point section of the system that contains the ESN.
3. When the ESN is part of a Quantum® or HomeWorks® system, then the *#AREA* and *#OUTPUT* commands found in the Quantum® "System Commands" section of this integration document should be used.

DEVICE Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set or Get Current Scene [4]	7	Scene
Set or Get Light Level	14	Level = 0–100 or 0.00–100.00, Fade [2] in: SS.ss [1], SS, MM:SS, or HH:MM:SS Delay [2,3] in: SS.ss [1], SS, MM:SS, or HH:MM:SS
Set Scene Lock [4]	16	0 = Off; 1 = On
Set Sequence State [4]	17	0 = Off; 1 = Sequence through Scenes 1–4; 2 = Sequence through Scenes 5–16
Start Raising	18	None
Start Lowering	19	None
Stop Raising / Lowering	20	None

NOTES

1. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.
2. The Fade and Delay time are optional. When not used, the system will use a one second fade time with zero second delay.
3. Not supported in QS Standalone.
4. QS Standalone only.
5. Not Supported in HomeWorks® QS.

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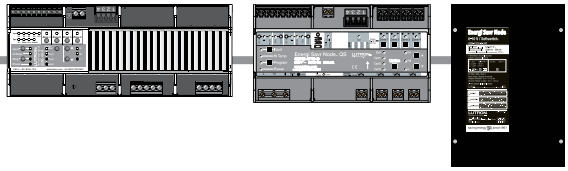


Energi Savr Node™ QS for International 0-10V / Switching:
DEVICE Commands *(continued)*

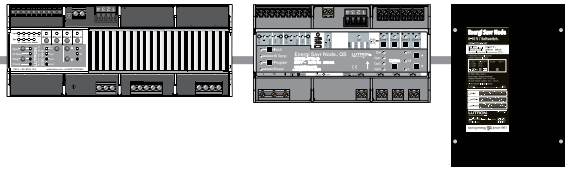
DEVICE Command-specific fields *(continued)*

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Set or Get Current Scene	7	Scene
Set or Get Light Level	14	Level = 0–100 or 0.00–100.00, Fade[2] in: SS.ss[1], SS, MM:SS, or HH:MM:SS Delay[2,3] in: SS.ss[1], SS, MM:SS, or HH:MM:SS
Set Scene Lock[4]	16	0 = Off; 1 = On
Set Sequence State[4]	17	0 = Off; 1 = Sequence through Scenes 1–4; 2 = Sequence through Scenes 5–16
Start Raising	18	None
Start Lowering	19	None
Stop Raising / Lowering	20	None

NOTES

1. Fractional seconds “SS.ss” will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.
2. The Fade and Delay time are optional. When not used, the system will use a one second fade time with zero second delay.
3. Not supported in QS Standalone.
4. QS Standalone only.



Energi Savr Node™ QS for International 0-10V/Switching:
OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*

#OUTPUT, 1, Action Number, Parameters

Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set or Get Zone Level	1	Level = 0–100 or 0.00–100.00, Fade[2] in: SS.ss[1], SS, MM:SS, or HH:MM:SS Delay[2,3] in: SS.ss[1], SS, MM:SS, or HH:MM:SS
Start Raising	2	None
Start Lowering	3	None
Stop Raising/Lowering	4	None

Example OUTPUT Commands

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set dimmer to 75% with a 1 min 30 sec fade.	*#OUTPUT,1,1,75,01:30*<CR><LF>
Start Raising zone level.	*#OUTPUT,1,2*<CR><LF>
Stop Raising/Lowering zone level.	*#OUTPUT,1,4*<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	*?OUTPUT,1,1*<CR><LF>
Response[4]: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 90%.	*~OUTPUT,1,1,90.00*<CR><LF>

NOTES

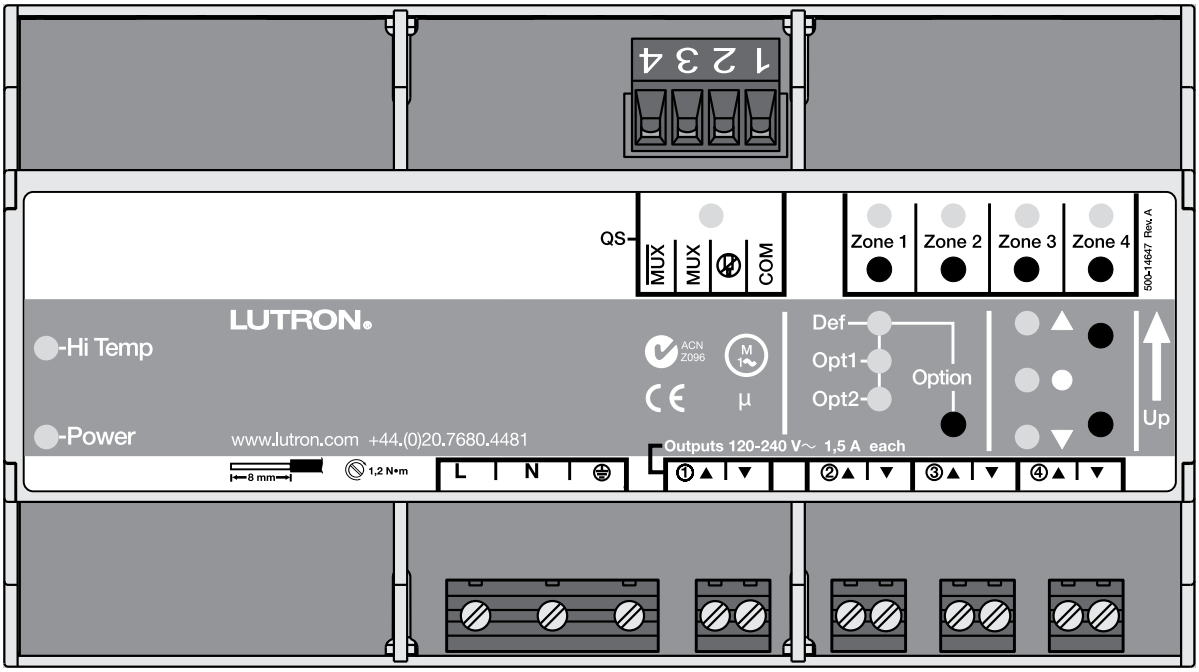
1. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.
2. The Fade and Delay time are optional. When not used the system will use a one second fade time with zero second delay.
3. Not supported in QS Standalone.
4. The system will report the target level of a dimmer while it is fading from one level to another. The actual level is not transmitted while dimming between levels. Example: If the "Over Sink" (Integration ID - 1) dimmer is at 20% and is then commanded to go to 100% by sending *#OUTPUT,1,1,100* the response from the system will be *~OUTPUT,1,1,100.00*

Energi Savr Node™ QS for International Motor Module

QS Model: QSE-CI-4M-D

HomeWorks® QS Model: LQSE-4M-D

LQSE-4M-D



Why Integrate with an Energi Savr Node™?

- Control individual zones and scenes in an area
- Query current scene and motor levels

Integration Capabilities

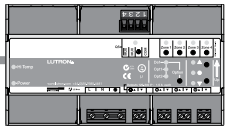
- Up to 4 zones

Supported Command Types

- **DEVICE** allows control and monitoring of zone levels and area scenes
- **OUTPUT** allows control and monitoring of the dimmer device output

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
ESN QS for Motor Modules				✓	



Energi Savr Node™ QS for International Motor Module:
OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*

#OUTPUT, 3, Action Number, Parameters

Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Start Raising	2	None
Start Lowering	3	None
Stop Raising/Lowering	4	None
Motor Jog Raise	18	None
Motor Jog Lower	19	None
Motor 4-Stage Jog Raise	20	None
Motor 4-Stage Jog Lower	21	None

Remote Power Modules

Adaptive Phase Control Models: HW-RPM-4A,

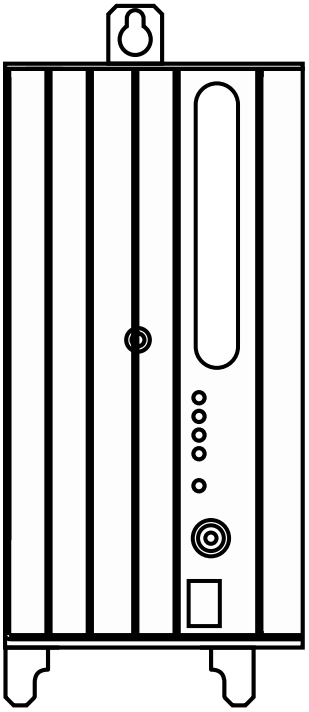
Phase Control Models: HW-RPM-4U

Quiet Fan Speed Control Models: HW-RPM-4FSQ

3-Wire Motor Control: HW-RPM-4M

Relay Switching: HW-RPM-4R

HW-RPM-4A



Why Integrate with a Remote Power Module?

- Control individual zones and scenes in an area
- Query current scene and light levels

Integration Capabilities

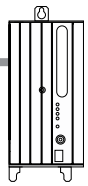
- Up to four zones on each remote power module

Supported Command Types

- **OUTPUT** allows control and monitoring of the control zone output

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
Remote Power Module		✓		✓	



Remote Power Module: OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*

#OUTPUT, 6, Action Number, Parameters

Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Set or Get Zone Level	1	0–100 or 0.00–100.00
		SS.ss[1], SS, MM:SS, or HH:MM:SS
Start Raising	2	None
Stop Lowering	3	None
Stop Raising/Lowering	4	None
Start Flash[2]	5	SS.ss[1], SS, MM:SS, or HH:MM:SS
Pulse	6	SS.ss[1], SS, MM:SS, or HH:MM:SS
Motor Jog Raise	18	None
Motor Jog Lower	19	None
Motor 4-Stage Jog Raise	20	None
Motor 4-Stage Jog Lower	21	None

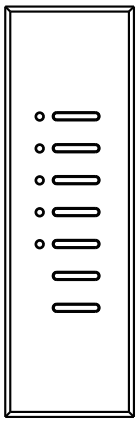
NOTES

1. Fractions are rounded **up** to the closest ¼ second.
2. To stop a dimmer from flashing, send it to a valid level (action 1).

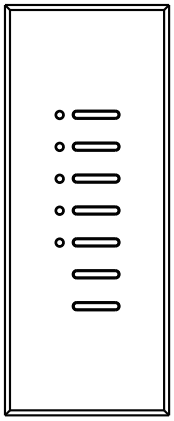
Architrave™ Keypads

QS Models (QSWAS-) with Faceplate/Button Kit Models (KP5-, KP7-): DN, KP7

HomeWorks® QS Models (HQWA-) with Faceplate/Button Kit Models (KP5-, KP7-): DN, KP7

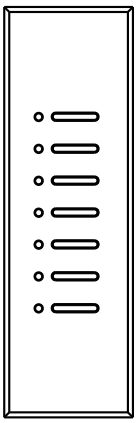


KP5-DN

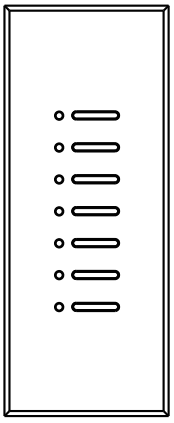


KP5-DW

QS	HomeWorks® QS
Button 1	*Button 1*
Button 2	*Button 2*
Button 3	*Button 3*
Button 4	*Button 4*
Button 5	*Button 5*
Raise	*Button 6*
Lower	*Button 7*



KP7-DN



KP7-DW

QS	HomeWorks® QS
Button 1	*Button 1*
Button 2	*Button 2*
Button 3	*Button 3*
Button 4	*Button 4*
Button 5	*Button 5*
Button 6	*Button 6*
Button 7	*Button 7*

Why Integrate with an Architrave™ Keypad?

- Simulate a button press
- Control LEDs of unprogrammed buttons

Compatibility

Architrave™ Keypads	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
QS Models	✓	✓			
HomeWorks® QS Models				✓	

Architrave™ Keypads: DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*

#DEVICE, 2, Component Number, Action Number, Parameters

Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Button 1	1	Press, Release, Multi Tap, Hold, Hold Release
Button 2	2	Press, Release, Multi Tap, Hold, Hold Release
Button 3	3	Press, Release, Multi Tap, Hold, Hold Release
Button 4	4	Press, Release, Multi Tap, Hold, Hold Release
Button 5	5	Press, Release, Multi Tap, Hold, Hold Release
Button 6	6	Press, Release, Multi Tap, Hold, Hold Release
Button 7	7	Press, Release, Multi Tap, Hold, Hold Release
Lower	18	Press, Release, Multi Tap, Hold, Hold Release
Raise	19	Press, Release, Multi Tap, Hold, Hold Release
CCI 1	25	Press, Release
CCI 2 [1]	26	Press, Release
LED 1 [1]	81	Set or Get LED state
LED 2	82	Set or Get LED state
LED 3	83	Set or Get LED state
LED 4	84	Set or Get LED state
LED 5	85	Set or Get LED state
LED 6	86	Set or Get LED state
LED 7	87	Set or Get LED state

NOTES

1. Only available on units in a Quantum® or HomeWorks® system.

Architrave™ Keypads: DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and Parameters:

Action	Action Number	Parameters
Press	3	None
Release	4	None
Hold	5	None[1]
Multi-tap	6	None[1]
Set (#) or Get (?) LED State[2]	9	0 = Off 1 = On 2 = Normal-Flash: 1 flash every second[1] 3 = Rapid-Flash: 10 flashes every second[1]
Hold Release	32	None[1]

Example DEVICE Commands

Examples presume keypad has been assigned Integration ID 2.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	*#DEVICE,2,1,3*<CR><LF>
Turn On LED 5.	*#DEVICE,2,85,9,1*<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	*?DEVICE,2,81,9*<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	*~DEVICE,2,81,9,1*<CR><LF>

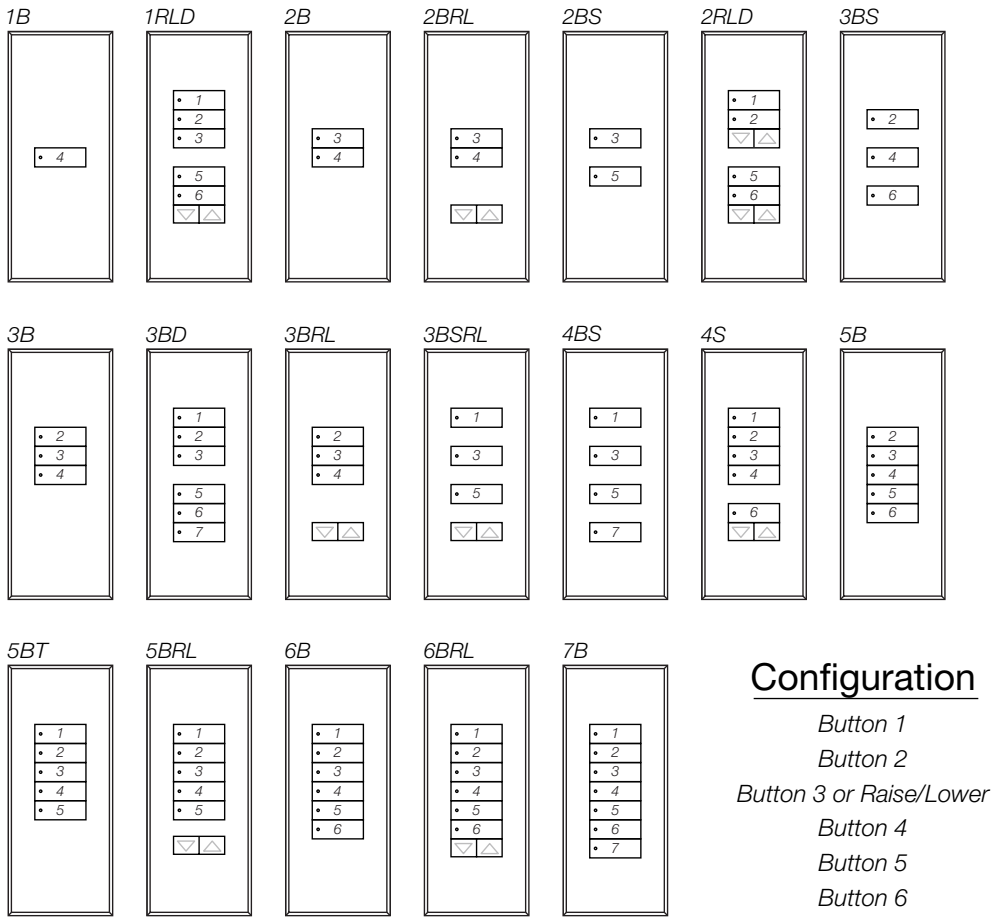
NOTES

1. Only available on units in a Quantum® or HomeWorks® system.
2. Quantum® or HomeWorks® only. "Set" is for unprogrammed buttons and buttons with LED logic 'Defined by Integration.'

Signature Series™ Keypads

QS Models (QSWAS-): 1B, 1RLD, 2B, 2BRL, 2RLD, 3B, 3BD, 3BRL, 5B, 5BRL, 7B

HomeWorks® QS Models (HQWAS-B, HQWAS-G)
with Faceplate/Button Kit Models (LFS-W): 1B, 1RLD, 2BS, 2RLD, 3BS, 3BD, 3BSRL, 4BS, 4S, 5B, 5BRL, 6B, 6BRL, 7B



Configuration

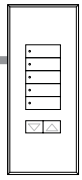
Button 1
Button 2
Button 3 or Raise/Lower
Button 4
Button 5
Button 6
Button 7 or Raise/Lower

Why Integrate with a Signature Series™ Keypad?

- Simulate a button press
- Control LEDs of unprogrammed buttons

Compatibility

Signature Series™ Keypads	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
QS Models	✓	✓			
HomeWorks® QS Models				✓	



Signature Series™ Keypads: DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*

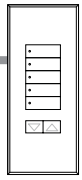
#DEVICE, 2, Component Number, Action Number, Parameters

Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Button 1	1	Press, Release, Multi Tap, Hold, Hold Release
Button 2	2	Press, Release, Multi Tap, Hold, Hold Release
Button 3	3	Press, Release, Multi Tap, Hold, Hold Release
Button 4	4	Press, Release, Multi Tap, Hold, Hold Release
Button 5	5	Press, Release, Multi Tap, Hold, Hold Release
Button 6	6	Press, Release, Multi Tap, Hold, Hold Release
Button 7	7	Press, Release, Multi Tap, Hold, Hold Release
Button Top Lower	16	Press, Release, Multi Tap, Hold, Hold Release
Button Top Raise	17	Press, Release, Multi Tap, Hold, Hold Release
Button Bottom Lower	18	Press, Release, Multi Tap, Hold, Hold Release
Button Bottom Raise	19	Press, Release, Multi Tap, Hold, Hold Release
CCI 1	25	Press, Release
CCI 2	26	Press, Release
LED 1	81	Set or Get LED state
LED 2	82	Set or Get LED state
LED 3	83	Set or Get LED state
LED 4	84	Set or Get LED state
LED 5	85	Set or Get LED state
LED 6	86	Set or Get LED state
LED 7	87	Set or Get LED state



Signature Series™ Keypads:
DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Press	3	None
Release	4	None
Hold	5	None[1]
Multi-tap	6	None[1]
Set (#) or Get (?) LED State[2]	9	0 = Off 1 = On 2 = Normal-Flash: 1 flash every second[1] 3 = Rapid-Flash: 10 flashes every second[1]
Hold Release	32	None

Example DEVICE Commands

Examples presume keypad has been assigned Integration ID 2.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	*#DEVICE,2,1,3*<CR><LF>
Turn On LED 5.	*#DEVICE,2,85,9,1*<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	*?DEVICE,2,81,9*<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	*~DEVICE,2,81,9,1*<CR><LF>

NOTES

1. Only available on units in a Quantum® or HomeWorks® system.
2. Quantum® or HomeWorks® only. "Set" is for unprogrammed buttons and buttons with LED logic 'Defined by Integration.'

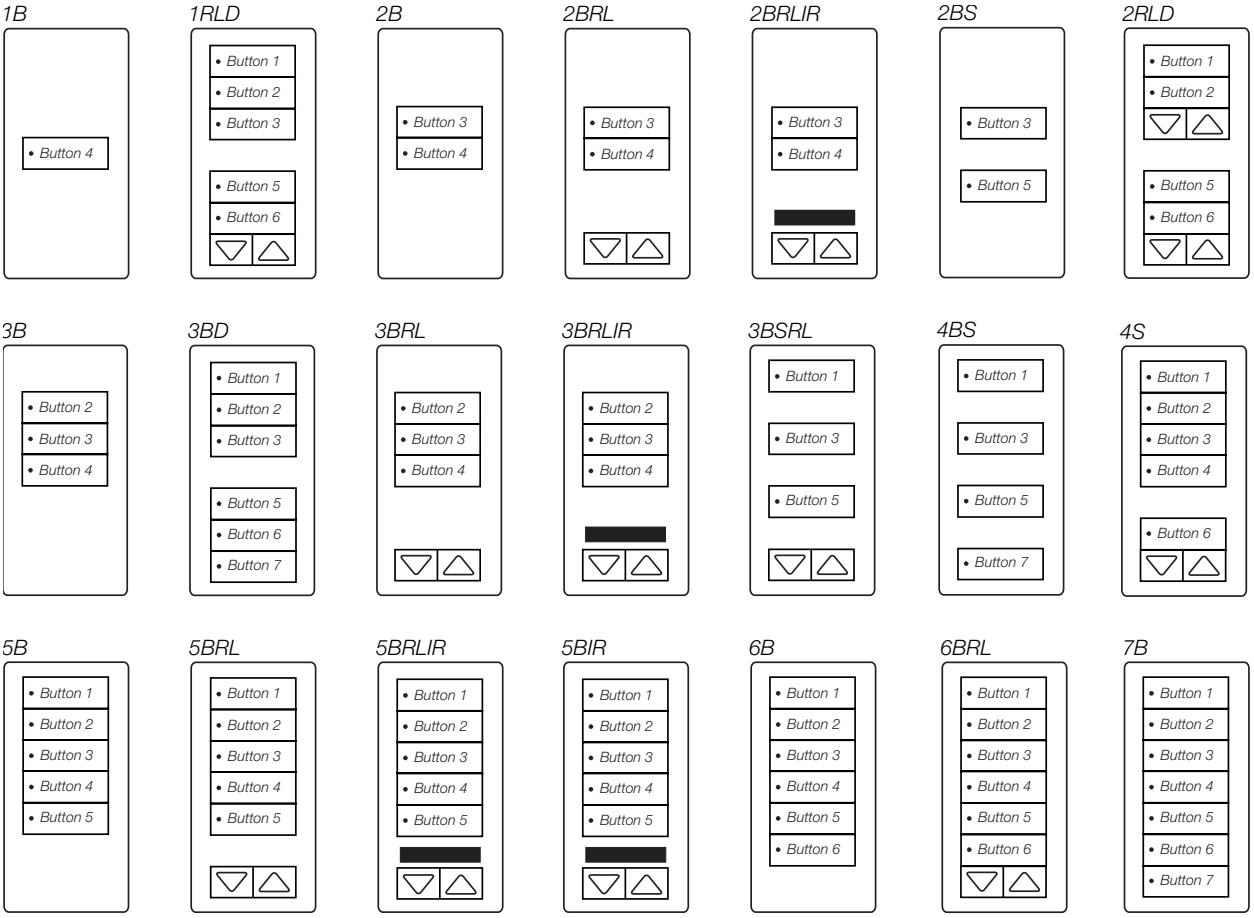
seeTouch® Keypads

QS Models (QSWS2-): 1B, 1RLD, 2B, 2BRL, 2BRLIR, 2RLD, 3B, 3BD, 3BRL, 3BRLIR, 5B, 5BRL, 5BRLIR, 7B

RadioRA® 2 Models (RRD-W): 1RLD, 2RLD, 3BD, 3BRL, 3BSRL, 4S, 5BRL, 5BRLIR, 6BRL, 7B

HomeWorks® QS Models
(HQRD-W, HQWD-W, HQWA-W, HQRA-W, HQWAS-W): 1B, 1RLD, 2BS, 2RLD, 3BS, 3BD, 3BSRL, 4BS, 4S, 5B, 5BRL, 5BIR, 6B, 6BRL, 7B

Clear Connect® Device Models (CCD-W): 6BRL

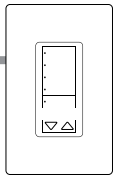


Why Integrate with a seeTouch® Keypad?

- Simulate a button press
- Control LEDs of unprogrammed buttons

Compatibility

seeTouch® Keypads	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
QS Models	✓	✓			
RadioRA® 2 Models			✓		
HomeWorks® QS Models				✓	
Clear Connect® Device Models					✓



seeTouch® Keypads: DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*

#DEVICE, 2, Component Number, Action Number, Parameters

Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

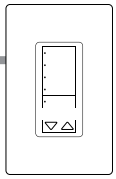
DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Button 1	1	Press, Release
Button 2	2	Press, Release
Button 3	3	Press, Release
Button 4	4	Press, Release
Button 5	5	Press, Release
Button 6	6	Press, Release
Button 7	7	Press, Release
Button Top Lower	16	Press, Release
Button Top Raise	17	Press, Release
Button Bottom Lower	18	Press, Release
Button Bottom Raise	19	Press, Release
CCI 1[1]	25	Press, Release
CCI 2[1]	26	Press, Release
LED 1	81	Set or Get LED state
LED 2	82	Set or Get LED state
LED 3	83	Set or Get LED state
LED 4	84	Set or Get LED state
LED 5	85	Set or Get LED state
LED 6	86	Set or Get LED state
LED 7	87	Set or Get LED state

NOTE

1. Only available on units in a Quantum® or HomeWorks® system.



seeTouch® Keypads: DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Press	3	None
Release	4	None
Hold	5	None[1]
Multi-tap	6	None[1]
Set (#) or Get (?) LED State[2]	9	0 = Off 1 = On 2 = Normal-Flash: 1 flash every second[1] 3 = Rapid-Flash: 10 flashes every second[1]

Example DEVICE Commands

Examples presume keypad has been assigned Integration ID 2.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	*#DEVICE,2,1,3*<CR><LF>
Turn On LED 5.	*#DEVICE,2,85,9,1*<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	*?DEVICE,2,81,9*<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	*~DEVICE,2,81,9,1*<CR><LF>

NOTES

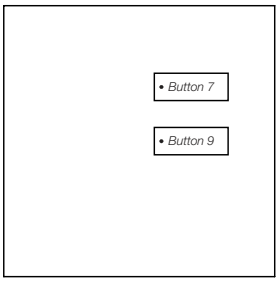
1. Only available on units in a Quantum® or HomeWorks® system.
2. Quantum® or HomeWorks® only. "Set" is for unprogrammed buttons and buttons with LED logic 'Defined by Integration.'

seeTouch® QS International Keypads

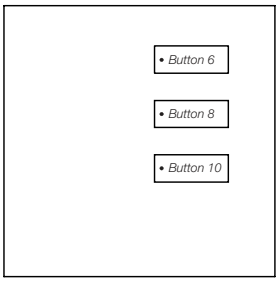
QS Models (QSWE-): 2B, 3B, 4B, 5BRL, 5BRLIR, 6BRL, 7BRL, 8BRL, 8BRLIR, 10BRL

HomeWorks® QS Models (HWQIS-NB-NONE)
with Faceplate/Button Kit Models (LFS-W): 2B, 3B, 4B, 5BRL, 5BRLIR, 6BRL, 7BRL, 8BRL, 8BRLIR, 10BRL

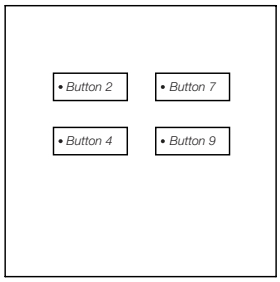
2B



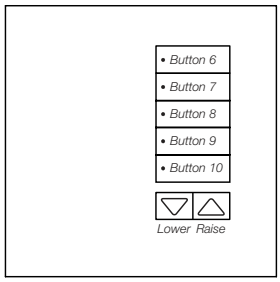
3B



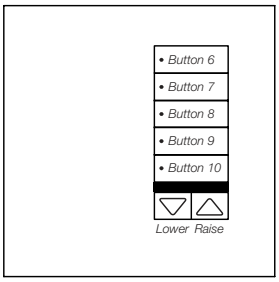
4B



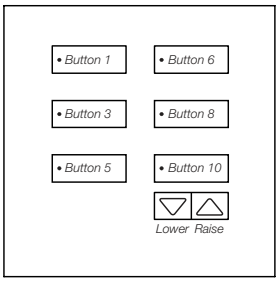
5BRL



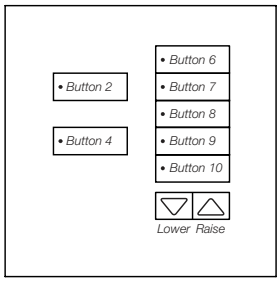
5BRLIR



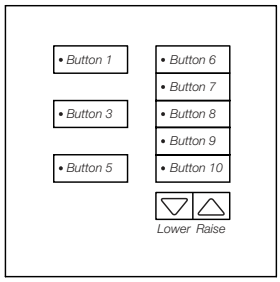
6BRL



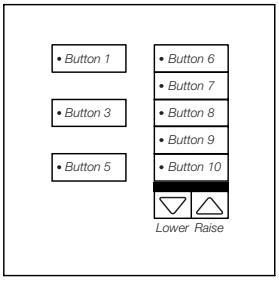
7BRL



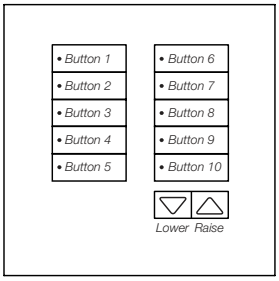
8BRL



8BRLIR



10BRL

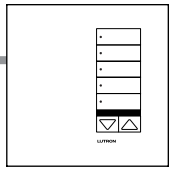


Why Integrate with a seeTouch® QS International Keypad?

- Simulate a button press
- Control LEDs of unprogrammed buttons

Compatibility

seeTouch® QS International Keypads	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
QS Models	✓	✓			
HomeWorks® QS Models				✓	



seeTouch® QS International Keypads:
DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*

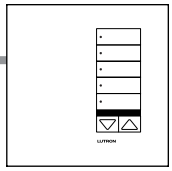
#DEVICE, 2, Component Number, Action Number, Parameters

Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Button 1	1	Press, Release, Multi Tap, Hold, Hold Release
Button 2	2	Press, Release, Multi Tap, Hold, Hold Release
Button 3	3	Press, Release, Multi Tap, Hold, Hold Release
Button 4	4	Press, Release, Multi Tap, Hold, Hold Release
Button 5	5	Press, Release, Multi Tap, Hold, Hold Release
Button 6	6	Press, Release, Multi Tap, Hold, Hold Release
Button 7	7	Press, Release, Multi Tap, Hold, Hold Release
Button 8	8	Press, Release, Multi Tap, Hold, Hold Release
Button 9	9	Press, Release, Multi Tap, Hold, Hold Release
Button 10	10	Press, Release, Multi Tap, Hold, Hold Release
Lower	18	Press, Release, Multi Tap, Hold, Hold Release
Raise	19	Press, Release, Multi Tap, Hold, Hold Release
CCI 1	25	Press, Release
CCI 2	26	Press, Release
LED 1	81	Set or Get LED state
LED 2	82	Set or Get LED state
LED 3	83	Set or Get LED state
LED 4	84	Set or Get LED state
LED 5	85	Set or Get LED state
LED 6	86	Set or Get LED state
LED 7	87	Set or Get LED state
LED 8	88	Set or Get LED state
LED 9	89	Set or Get LED state
LED 10	90	Set or Get LED state



seeTouch® QS International Keypads:
DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Press	3	None
Release	4	None
Hold	5	None
Multi-tap	6	None
Set (#) or Get (?) LED State [1]	9	0 = Off 1 = On 2 = Normal-Flash: 1 flash every sec 3 = Rapid-Flash: 10 flashes every sec
Hold Release	32	None

Example DEVICE Commands

Examples presume keypad has been assigned Integration ID 2.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	*#DEVICE,2,1,3*<CR><LF>
Turn On LED 5.	*#DEVICE,2,85,9,1*<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	*?DEVICE,2,81,9*<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	*~DEVICE,2,81,9,1*<CR><LF>

NOTE

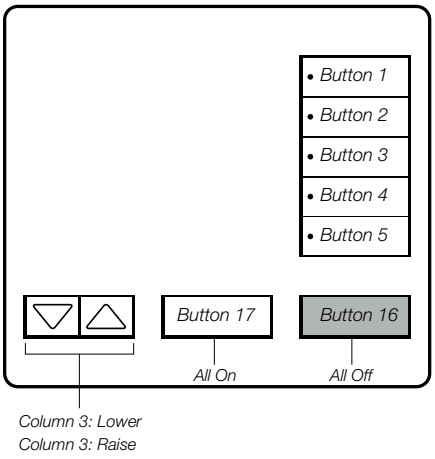
1. "Set" is for unprogrammed buttons and buttons with LED logic 'Defined by Integration.'

Tabletop seeTouch® Keypads

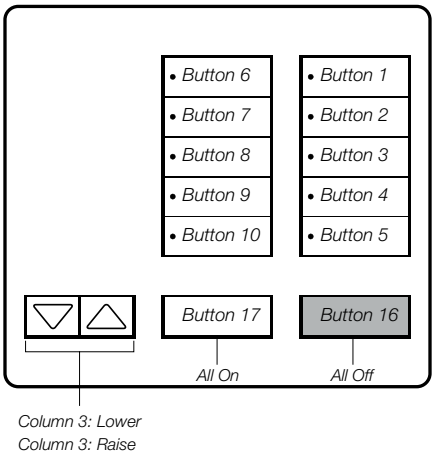
RadioRA® 2 Models (RR-): T5RL, T10RL, T15RL

HomeWorks® QS Models (HQR-, HQK-, HQQ-, HQM-, HQN-): T5RL, T10RL, T15RL, T5CRL, T10CRL, T15CRL

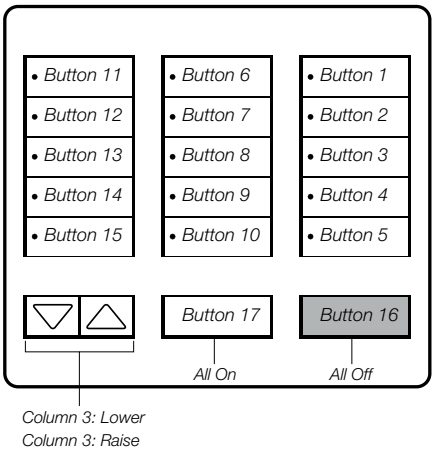
T5-RL



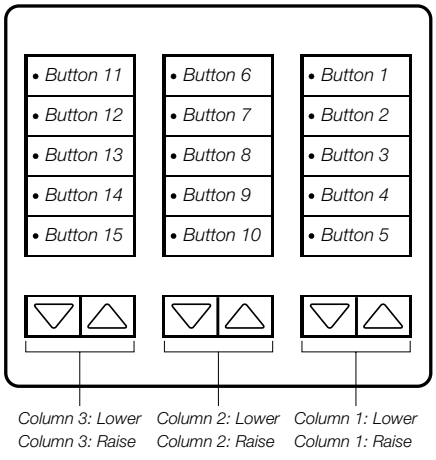
T10-RL



T15-RL



T15-CRL



Why Integrate with a Tabletop seeTouch® Keypad?

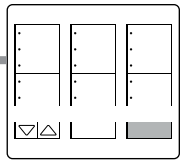
- Simulate a button press
- Control LEDs of unprogrammed buttons

Additional Commands

- None

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
Tabletop seeTouch®			✓	✓	



Tabletop seeTouch® Keypads:
DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*

#DEVICE, 3, Component Number, Action Number, Parameters

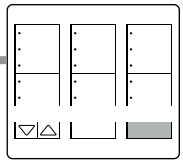
Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Button 1	1	Press, Release
Button 2	2	Press, Release
Button 3	3	Press, Release
Button 4	4	Press, Release
Button 5	5	Press, Release
Button 6	6	Press, Release
Button 7	7	Press, Release
Button 8	8	Press, Release
Button 9	9	Press, Release
Button 10	10	Press, Release
Button 11	11	Press, Release
Button 12	12	Press, Release
Button 13	13	Press, Release
Button 14	14	Press, Release
Button 15	15	Press, Release
Button 16	16	Press, Release
Button 17	17	Press, Release
Column 1: Lower	20	Press, Release
Column 1: Raise	21	Press, Release
Column 2: Lower	22	Press, Release
Column 2: Raise	23	Press, Release
Column 3: Lower	24	Press, Release
Column 3: Raise	25	Press, Release

Component numbers continued on next page...



Tabletop seeTouch® Keypads:
DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Component Numbers:

Component	Component Number	Available Actions
LED 1	81	Set or Get LED state
LED 2	82	Set or Get LED state
LED 3	83	Set or Get LED state
LED 4	84	Set or Get LED state
LED 5	85	Set or Get LED state
LED 6	86	Set or Get LED state
LED 7	87	Set or Get LED state
LED 8	88	Set or Get LED state
LED 9	89	Set or Get LED state
LED 10	90	Set or Get LED state
LED 11	91	Set or Get LED state
LED 12	92	Set or Get LED state
LED 13	93	Set or Get LED state
LED 14	94	Set or Get LED state
LED 15	95	Set or Get LED state

Actions and Parameters:

Action	Action Number	Parameters
Press	3	None
Release	4	None
Set (#) or Get (?) LED State *Set is for unprogrammed LEDs only*	9	0 = Off 1 = On

Example DEVICE Commands

Examples presume keypad has been assigned Integration ID 3.

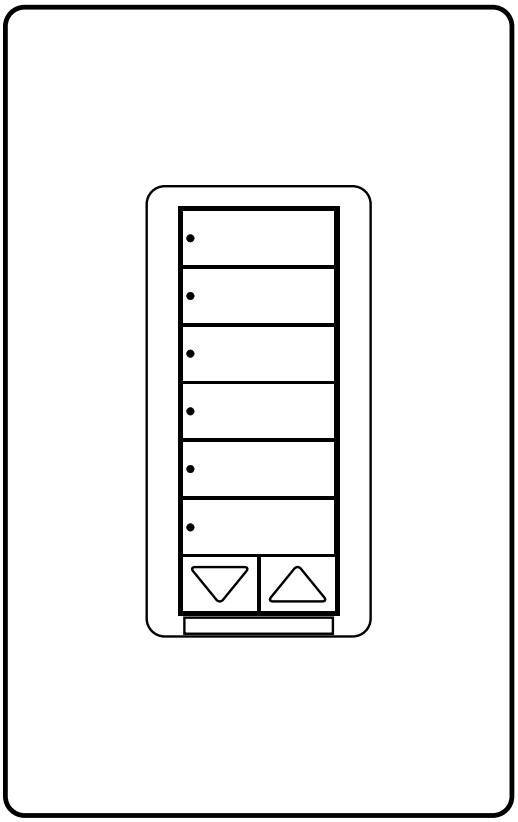
Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	*#DEVICE,3,1,3*<CR><LF>
Turn On LED 1.	*#DEVICE,3,81,9,1*<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	*?DEVICE,3,81,9*<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	*~DEVICE,3,81,9,1*<CR><LF>

Hybrid Keypad

RadioRA® 2 Models (RRD-H): 1RLD, 2RLD, 3BSRL, 4S, 5BRL, 6BRL

HomeWorks® QS Models (HQRD-H): 1RLD, 2RLD, 3BSRL, 4S, 5BRL, 6BRL

H6BRL



Why Integrate with a Hybrid Keypad?

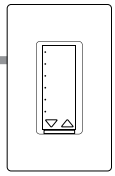
- Turn On to specific light level or Off
- Raise/Lower light level
- Query current light level

Additional Commands

- None

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
Hybrid Keypad			✓	✓	



Hybrid Keypad: OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*

#OUTPUT, 1, Action Number, Parameters

Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Set or Get Zone Level	1	Level = 0–100 or 0.00–100.00, Fade[2] in: SS.ss[1], SS, MM:SS, or HH:MM:SS Delay[2] in: SS.ss[1], SS, MM:SS, or HH:MM:SS
Start Raising	2	None
Start Lowering	3	None
Stop Raising/Lowering	4	None
Start Flashing[4,5,6]	5	Fade[2] in: SS.ss[1], SS, MM:SS, or HH:MM:SS Delay[2] in: SS.ss[1], SS, MM:SS, or HH:MM:SS

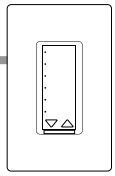
Example OUTPUT Commands

Examples presume dimmer has been assigned Integration ID 1.

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set dimmer to 75% with a 1 min 30 sec fade.	*#OUTPUT,1,1,75,01:30*<CR><LF>
Start Raising dimmer level.	*#OUTPUT,1,2*<CR><LF>
Stop Raising/Lowering dimmer level.	*#OUTPUT,1,4*<CR><LF>
Start Flashing a dimmer.	*#OUTPUT,1,5*<CR><LF>
Start Flashing a dimmer once every 2 seconds.	*#OUTPUT,1,5,1*<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	*?OUTPUT,1,1*<CR><LF>
Response[3,4]: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 90%.	*~OUTPUT,1,1,90.00*<CR><LF>

NOTES

1. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.
2. The Fade and Delay time are optional. When not used the system will use a one second fade time with zero second delay.
3. The system will report the target level of a dimmer while it is fading from one level to another. The actual level is not transmitted while dimming between levels. Example: If the "Over Sink" (1) dimmer is at 20% and is then commanded to go to 100% by sending *#OUTPUT,1,1,100* the response from the system will be *~OUTPUT,1,1,100.00*
4. The system will not report a level while the output is flashing, it will instead report that it is flashing.
5. Default flash every second, unless fade time is specified (flash period is 2x fade time).
6. To stop a dimmer from flashing, send it to a valid level.



Hybrid Keypad: DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*

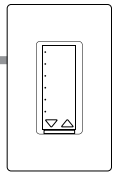
#DEVICE, 2, Component Number, Action Number, Parameters

Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Button 1	1	Press, Release
Button 2	2	Press, Release
Button 3	3	Press, Release
Button 4	4	Press, Release
Button 5	5	Press, Release
Button 6	6	Press, Release
Button 7	7	Press, Release
Button Top Lower	16	Press, Release
Button Top Raise	17	Press, Release
Button Bottom Lower	18	Press, Release
Button Bottom Raise	19	Press, Release
LED 1	81	Set or Get LED state
LED 2	82	Set or Get LED state
LED 3	83	Set or Get LED state
LED 4	84	Set or Get LED state
LED 5	85	Set or Get LED state
LED 6	86	Set or Get LED state
LED 7	87	Set or Get LED state



Hybrid Keypads: DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Press	3	None
Release	4	None
Set (#) or Get (?) LED State	9	0 = Off 1 = On 2 = Normal-Flash: 1 flash every second [1] 3 = Rapid-Flash: 10 flashes every second [1]

NOTE

1. "Set" is for LEDs on unprogrammed buttons and buttons with LED logic 'Defined by Integration.'

Example DEVICE Commands

Examples presume keypad has been assigned Integration ID 2.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	*#DEVICE,2,1,3*<CR><LF>
Turn On LED 5.	*#DEVICE,2,85,9,1*<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	*?DEVICE,2,81,9*<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	*~DEVICE,2,81,9,1*<CR><LF>

Pico® Wireless Controls

CURRENT

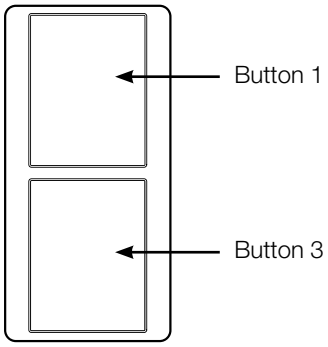
MODELS: PJ-2B, PJ-3B, PJ-2BRL, PJ-3BRL

LEGACY

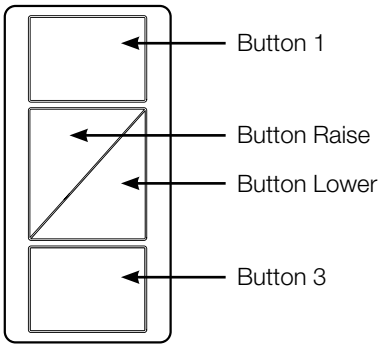
QS Models (QSR4P-, QSR8P-, QSRKP-, QSRMP-,): 2, 2R, 3R

RadioRA® 2 Models (RRD- P): 3BRL-L, 3BRL-S

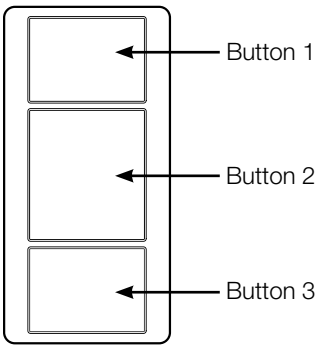
2B



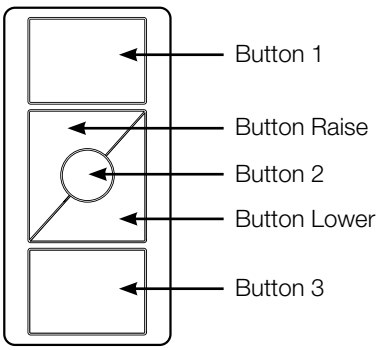
2BRL



3B



3BRL



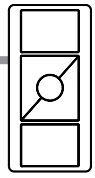
Why Integrate with a Pico® Wireless Control?

- Simulate a button press
- Monitor button presses

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
QS Models*		✓*			
RadioRA® 2 Models			✓		
Current Models (PJ-)	✓	✓	✓	✓	

* Can only be used when associated to a QSM



Pico® wireless controls: DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*

#DEVICE, 2, Component Number, Action Number, Parameters

Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Button 1	2	Press, Release
Button 2	3	Press, Release
Button 3	4	Press, Release
Button Raise	5	Press, Release
Button Lower	6	Press, Release

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Press	3	None
Release	4	None

Example DEVICE Commands

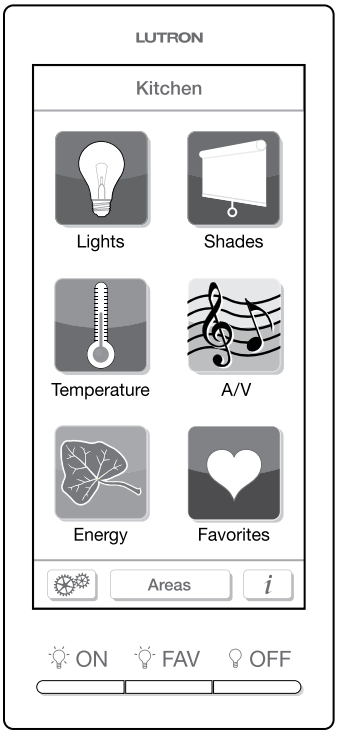
Examples presume keypad has been assigned Integration ID 2.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	*#DEVICE,2,2,3*<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
Button 1 was pressed.	*~DEVICE,2,2,3*<CR><LF>

Dynamic Keypad

Model: HQ-J-DK420

HQ-J-DK420

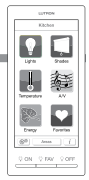


Why Integrate with a Dynamic Keypad?

- Recognize a button press/release in order to control a third party device from the Dynamic Keypad's user interface
- Simulate a button press
- Control LEDs of unprogrammed buttons

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
Dynamic Keypad				✓	



Dynamic Keypad: DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*

#DEVICE, 2, Component Number, Action Number, Parameters

Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Button 1 (left hard button)	1	Press, Release
Button 2 (middle hard button)	2	Press, Release
Button 3 (right hard button)	3	Press, Release
Button N[1]	N	Press, Release
LED M[1]	M	Set or Get LED state

NOTES

1. Component Numbers for the various pages of buttons and LEDs for a Dynamic Keypad are generated by the HomeWorks® QS Software.

Action Numbers and Parameters:

Action	Action Number	Parameters
Press	3	None
Release	4	None
Hold	5	None
Multi-tap	6	None
Set (#) or Get (?) LED State	9	0 = Off 1 = On 2 = Normal-Flash 3 = Rapid-Flash

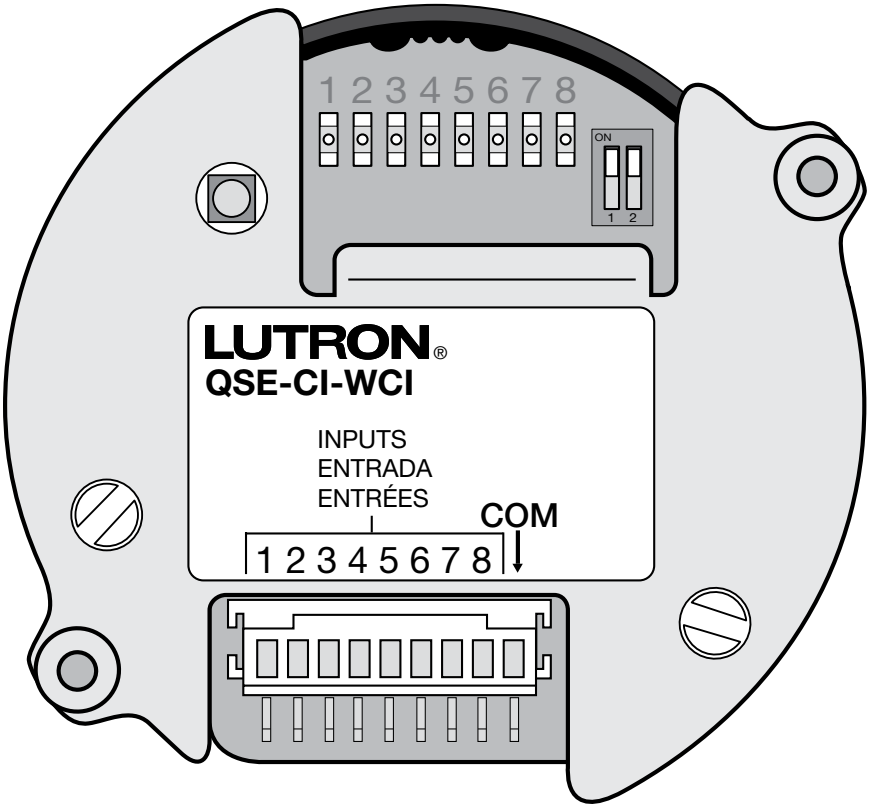
Example DEVICE Commands

Examples presume the Dynamic Keypad has been assigned Integration ID 23.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 118.	*#DEVICE,23,118,3*<CR><LF>
Turn On LED 566.	*#DEVICE,23,566,9,1*<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 566?	*?DEVICE,23,566,9*<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	*~DEVICE,23,566,9,1*<CR><LF>

Wallbox Input Closure Interface

Model: QSE-CI-WCI

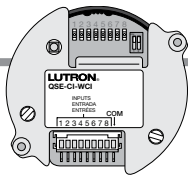


Why Integrate with a Wallbox Input Closure?

- Simulate a button press

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
Wallbox Input Closure Interface	✓	✓		✓	



Wallbox Input Closure Interface:
DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*

#DEVICE, 2, Component Number, Action Number, Parameters

Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

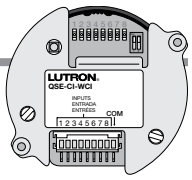
DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Button 1	1	Press, Release, Multi Tap, Hold, Hold Release
Button 2	2	Press, Release, Multi Tap, Hold, Hold Release
Button 3	3	Press, Release, Multi Tap, Hold, Hold Release
Button 4	4	Press, Release, Multi Tap, Hold, Hold Release
Button 5	5	Press, Release, Multi Tap, Hold, Hold Release
Button 6	6	Press, Release, Multi Tap, Hold, Hold Release
Button 7	7	Press, Release, Multi Tap, Hold, Hold Release
LED 1	81	Set or Get LED state
LED 2	82	Set or Get LED state
LED 3	83	Set or Get LED state
LED 4	84	Set or Get LED state
LED 5	85	Set or Get LED state
LED 6	86	Set or Get LED state
LED 7	87	Set or Get LED state

NOTE

1. Only available on units in a Quantum® or HomeWorks® system.



Wallbox Input Closure Interface:
DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Press	3	None
Release	4	None
Hold	5	None[1]
Multi-tap	6	None[1]
Set (#) or Get (?) LED State[2]	9	0 = Off 1 = On 2 = Normal-Flash: 1 flash every second[1] 3 = Rapid-Flash: 10 flashes every second[1]
Hold Release	32	None[1]

Example DEVICE Commands

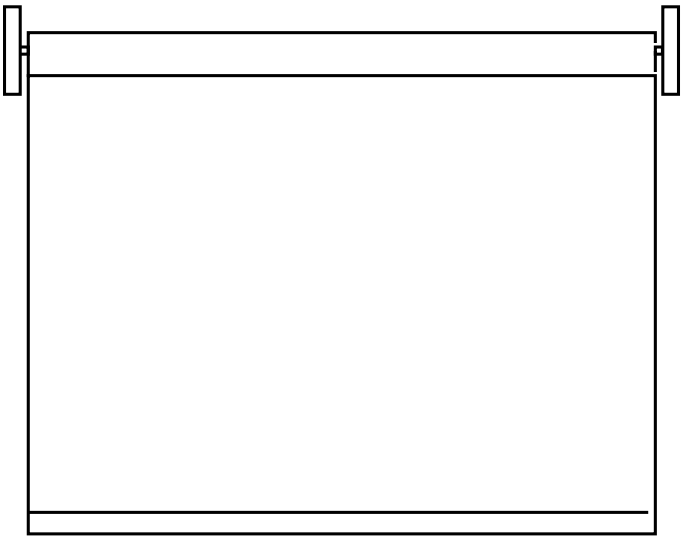
Examples presume keypad has been assigned Integration ID 2.

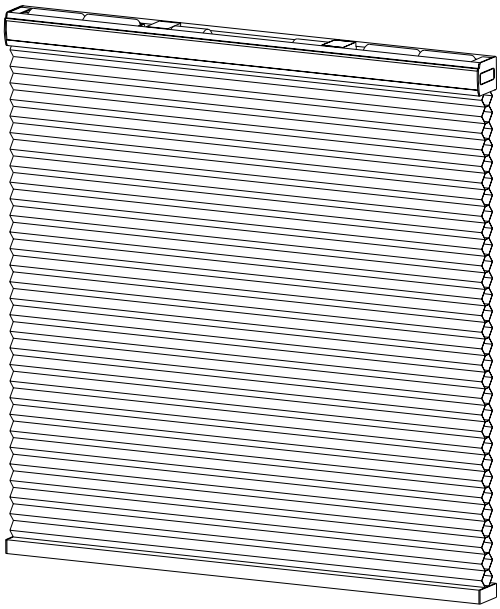
Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	*#DEVICE,2,1,3*<CR><LF>
Turn On LED 5.	*#DEVICE,2,85,9,1*<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	*?DEVICE,2,81,9*<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	*~DEVICE,2,81,9,1*<CR><LF>

NOTES

1. Only available on units in a Quantum® or HomeWorks® system.
2. Quantum® or HomeWorks® only. "Set" is for unprogrammed buttons and buttons with LED logic 'Defined by Integration.'

Sivoia® QS Shades
Sivoia® QS Wireless Shades





Why Integrate with Sivoia® QS Shades?

- Set shades to a specific level
- Query current level

Integration Capabilities

- One controllable output (use OUTPUT command)

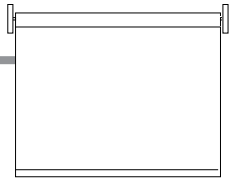
Supported Command Types

- **OUTPUT** allows control and monitoring of the shade output
- **SHADEGRP** allows control of shade groups in a Quantum® or HomeWorks® QS system. Shade Groups are collections of shades that operate in unison.

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
Sivoia® QS	✓	✓		✓	
Sivoia® QS Wireless Shades			✓	✓	✓

Includes all roller, cellular, and drapery styles



Sivoia® QS Shades: OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*

#OUTPUT, 1, Action Number, Parameters

Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Set (#) or Get (?) Zone Level	1	Level[2] = 0–100 or 0.00–100.00[1] Fade[3] in: SS.ss[4], SS, MM:SS, or HH:MM:SS Delay[5] in: SS.ss[4], SS, MM:SS, or HH:MM:SS
Start Raising	2	None
Start Lowering	3	None
Stop Raising/Lowering	4	None

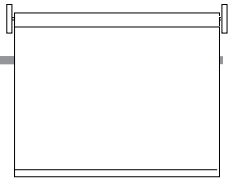
Example OUTPUT Messages

Examples presume shade has been assigned Integration ID 1.

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set shade to 75% with a 1 min 30 sec delay.	*#OUTPUT,1,1,75,0,1:30*<CR><LF>
Start Raising shade level.	*#OUTPUT,1,2*<CR><LF>
Stop Raising/Lowering shade level.	*#OUTPUT,1,4*<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	*?OUTPUT,1,1*<CR><LF>
Response[6]: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 90%.	*~OUTPUT,1,1,90.00*<CR><LF>

NOTES

1. 0% = Closed; 100% = Open
2. For shades, a level of 0 (or 0.00) equals closed and a level of 100 (or 100.00) equals full open.
3. Fade is not available for shades since they move at a constant rate. The parameter must be entered but is ignored.
4. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a delay time is specified as 1.45 seconds a value of 1.25 seconds will be used.
5. The Delay time is optional. When not used, the system will use a zero second delay. The minimum delay time is 0.25 seconds. The maximum delay time is 4 hours. *Not supported in QS Standalone.*
6. The system will report the target level of a shade. The actual level is not transmitted while they are moving. Example: If the Living Room Blackouts (Integration ID 1) are at 20% and are commanded to go to 100% by sending *#OUTPUT,1,1,100* the response from the system will be *~OUTPUT,1,1,100.00*



Sivoia® QS Shades: OUTPUT Commands

SHADEGRP Command Formats

Operation *Integration ID (example)*

#SHADEGRP[1], 2, Action Number, Parameters

Command *Use "SHADEGRP Command-specific fields" tables to complete these command fields.*

SHADEGRP Command-specific fields

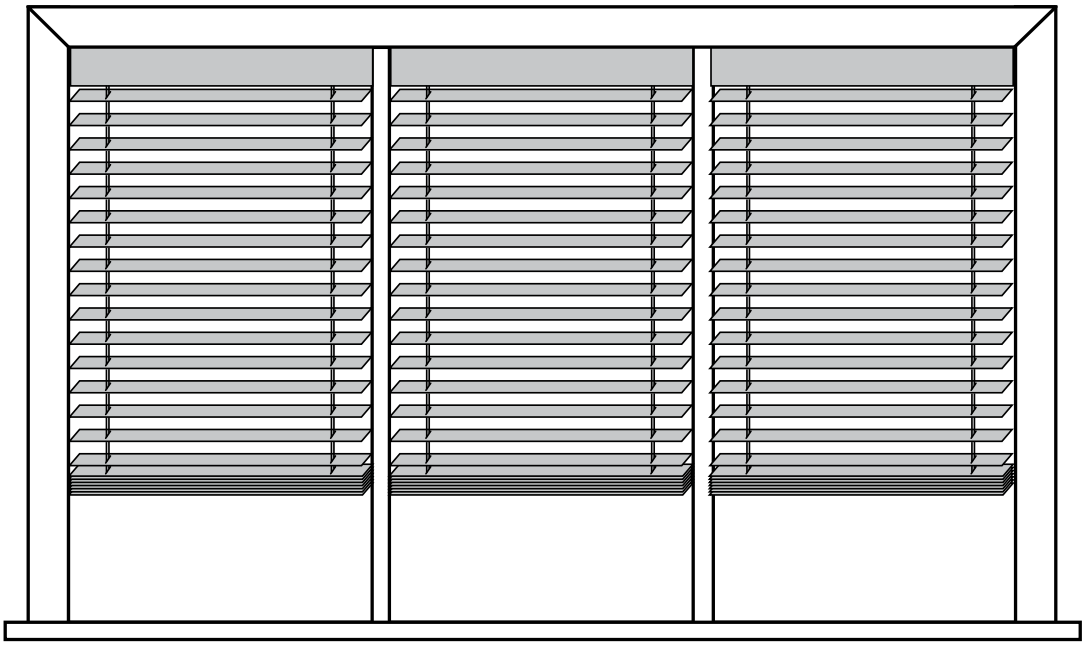
Action Numbers and **Parameters:**

Action	Action Number	Parameters
Set (#) or Get (?) Shade Group Level[6]	1	Level[2] = 0–100 or 0.00–100.00 Delay[2] in: SS.ss[3], SS, MM:SS, or HH:MM:SS
Start Raising[4]	2	None
Start Lowering[4]	3	None
Stop Raising/Lowering	4	None
Set (#) or Get (?) Current Preset	6	Preset Number[5] = 0–30
Set (#) Venetian Tilt	14	Level[1] = 0–100 or 0.00–100.00, Fade[2] in: SS.ss[3], SS, MM:SS, or HH:MM:SS Delay[2] in: SS.ss[3], SS, MM:SS, or HH:MM:SS
Set (#) Lift and Tilt for venetians	15	Lift[1] = 0–100 or 0.00–100.00, Tilt[1] = 0–100 or 0.00–100.00, Fade[2] in: SS.ss[3], SS, MM:SS, or HH:MM:SS Delay[2] in: SS.ss[3], SS, MM:SS, or HH:MM:SS
Raise Venetian Tilt[4]	16	None
Lower Venetian Tilt[4]	17	None
Stop Venetian Tilt[4]	18	None
Raise Venetian Lift[4]	19	None
Lower Venetian Lift[4]	20	None
Stop Venetian Lift[4]	21	None

NOTES

1. The Level is accepted as a percentage, where 100% is fully open and 0% is fully closed.
2. The Fade and Delay time are optional. For shades, the Fade parameter has no effect (since shades have fixed speeds) but it is required when specifying an optional delay. When not used, the system will use a zero second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours.
3. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a delay time is specified as 1.45 seconds, a value of 1.25 seconds will be used.
4. When a Raise/Lower command is issued, the shade group's level will continue to go towards open/close until a Stop command is received.
5. Preset 0 is the Open Preset and Preset 30 is the Closed Preset.
6. Get (?) Shade Group Level (action number 1).

Sivoia® QS Venetian Blinds
Sivoia® QS Wireless Venetian Blinds



Why Integrate with Sivoia® QS Venetian Blinds?

- Set Venetian blind tilt, lift to specific levels
- Query current tilt, lift levels

Integration Capabilities

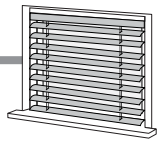
- One controllable output (use OUTPUT command)

Supported Command Types

- **OUTPUT** allows control and monitoring of the Venetian blind output
- **SHADEGRP** allows control of shade groups in a Quantum® or HomeWorks® QS system. Shade Groups are collections of shades that operate in unison

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
Sivoia® QS Venetians	✓			✓	
Sivoia® QS Wireless Venetians			✓	✓	✓



Sivoia® QS Venetian Blinds: OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*

#OUTPUT, 1, Action Number, Parameters

Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Set (#) or Get (?) Venetian lift level only	1	Lift Level[1] = 0–100 or 0.00–100.00[1] Fade[2] in: SS.ss[3], SS, MM:SS, or HH:MM:SS Delay[4] in: SS.ss[3], SS, MM:SS, or HH:MM:SS
Set (#) or Get (?) Venetian tilt level only	9	Tilt Level[1] = 0–100 or 0.00–100.00[1] Fade[2] in: SS.ss[3], SS, MM:SS, or HH:MM:SS Delay[4] in: SS.ss[3], SS, MM:SS, or HH:MM:SS
Set (#) or Get (?) Venetian lift & tilt level	10	Lift Level[1] = 0–100 or 0.00–100.00[1] Tilt Level[1] = 0–100 or 0.00–100.00[1] Fade[2] in: SS.ss[3], SS, MM:SS, or HH:MM:SS Delay[4] in: SS.ss[3], SS, MM:SS, or HH:MM:SS
Start raising Venetian tilt	11	None
Start lowering Venetian tilt	12	None
Stop Venetian tilt	13	None
Start raising Venetian lift	14	None
Start lowering Venetian lift	15	None
Stop Venetian lift	16	None

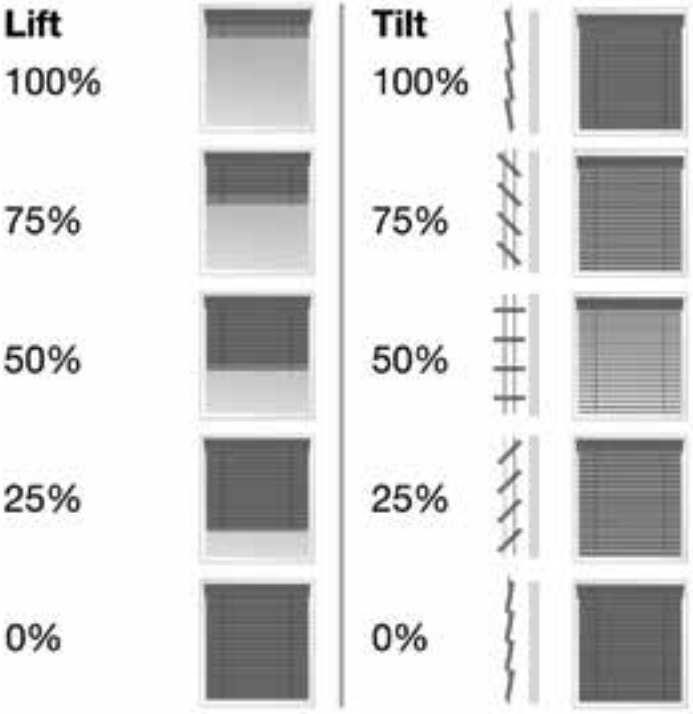
Example OUTPUT Messages

Examples presume shade has been assigned Integration ID 1.

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set Venetian blind to lift 0%, tilt 50%	*#OUTPUT,1,10,0,50*<CR><LF>
Start raising Venetian tilt.	*#OUTPUT,1,11*<CR><LF>
Stop raising Venetian tilt.	*#OUTPUT,1,13*<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the Venetian lift and tilt?	*?OUTPUT,1,10*<CR><LF>
Response[5]: ~OUTPUT, Integration ID, Action Number, Parameters	
Venetian lift level is 0%, tilt level 50%.	*~OUTPUT,1,10,0.00,50.00*<CR><LF>

Notes continued on next page...

NOTES

1. 

2. Fade is not available for blinds since they move at a constant rate. The parameter must be entered but is ignored.
3. Fractional seconds “SS.ss” will be rounded down to the nearest quarter second. For example, if a delay time is specified as 1.45 seconds a value of 1.25 seconds will be used.
4. The Delay time is optional. When not used, the system will use a zero second delay. The minimum delay time is 0.25 seconds. The maximum delay time is 4 hours. *Not supported in QS Standalone.*
5. The system will report the target lift level and target tilt level of a Venetian blind. The actual levels are not transmitted while it is moving.

   Example: If the Kitchen Venetian (Integration ID 1) is set at 25% lift and 75% tilt, and is commanded to go to 100% lift and 50% tilt by sending *#OUTPUT,1,10,100,50* the response from the system will be *~OUTPUT,1,10,100.00,50.00*

Maestro® Dimmers & Plug-In Modules

RadioRA® 2 Models (RRD-): 6D, 6NA, 8ANS, 8S-DV, 10D, 10ND, F6AN-DV, 3LD

RadioRA® 2 Models (RR-): 3PD, 15APS

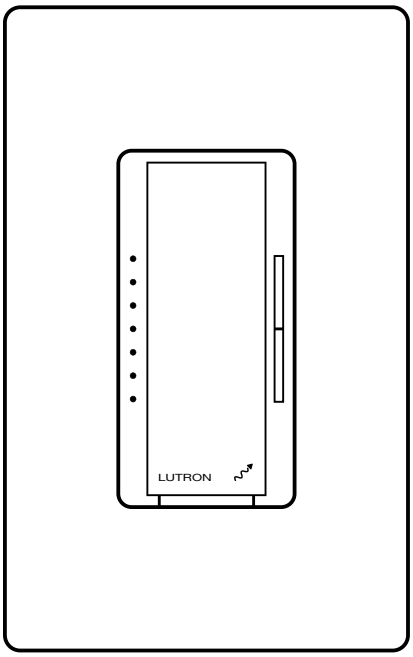
HomeWorks® QS Models (HQRD-, HQRA): 6D, 6ND, 10D, 10ND, 6NA, F6AN-DV, 8ANS, 8S-DV

HomeWorks® QS Models (HWD-, HWA-): 6D, 6ND, 10D, 10ND, 5NE*, 8ANS

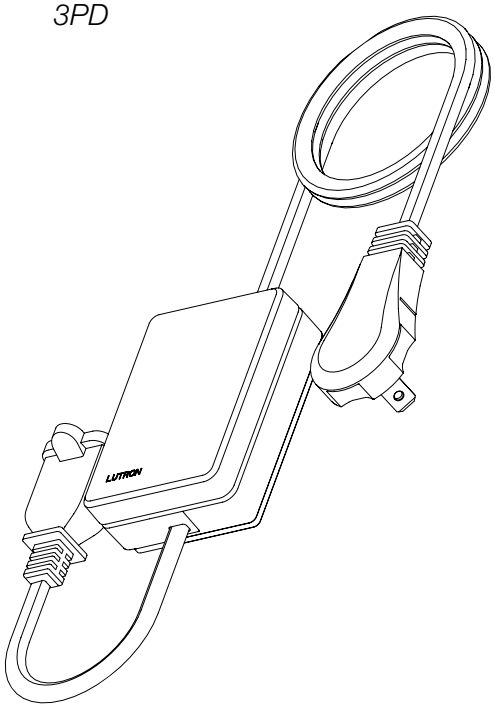
HomeWorks® QS Models (HQR-): 3PD-1, 15APS-1, 3LD

Clear Connect® Device Models (CCD-W): 6D, 6NA, F6AN-DV, 15APS-1

6D



3PD



Why Integrate with a Maestro® Dimmer or Plug-In Module?

- Turn On to specific light level or Off
- Raise/Lower light level
- Query current light level

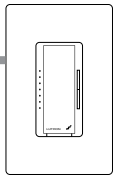
Additional Commands

- None

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
RadioRA® 2 Models			✓		
HomeWorks® QS Models				✓	
Clear Connect® Devices Models					✓

* 5NE is not available in architectural style



Maestro® Dimmers: OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*

#OUTPUT, 1, Action Number, Parameters

Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Set or Get Zone Level	1	Level = 0–100 or 0.00–100.00, Fade[2] in: SS.ss[1], SS, MM:SS, or HH:MM:SS Delay[2] in: SS.ss[1], SS, MM:SS, or HH:MM:SS
Start Raising	2	None
Start Lowering	3	None
Stop Raising/Lowering	4	None
Start Flashing[4,5,6]	5	Fade[2] in: SS.ss[1], SS, MM:SS, or HH:MM:SS Delay[2] in: SS.ss[1], SS, MM:SS, or HH:MM:SS

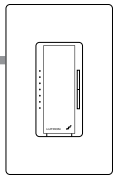
Example OUTPUT Commands

Examples presume dimmer has been assigned Integration ID 1.

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set dimmer to 75% with a 1 min 30 sec fade.	*#OUTPUT,1,1,75,01:30*<CR><LF>
Start Raising dimmer level.	*#OUTPUT,1,2*<CR><LF>
Stop Raising/Lowering dimmer level.	*#OUTPUT,1,4*<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	*?OUTPUT,1,1*<CR><LF>
Response[3]: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 90%.	*~OUTPUT,1,1,90.00*<CR><LF>

NOTES

1. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.
2. The Fade and Delay time are optional. When not used the system will use a one second fade time with zero second delay.
3. The system will report the target level of a dimmer while it is fading from one level to another. The actual level is not transmitted while dimming between levels. Example: If the "Over Sink" (1) dimmer is at 20% and is then commanded to go to 100% by sending *#OUTPUT,1,1,100* the response from the system will be *~OUTPUT,1,1,100.00*
4. The system will not report a level while the output is flashing, it will instead report that it is flashing.
5. Default flash every second, unless fade time is specified (flash period is 2x fade time).
6. To stop a dimmer from flashing, send it to a valid level.



Maestro® Dimmers: DEVICE Commands

DEVICE Command Format

Operation *Integration ID (example)*

#DEVICE[1], 2, Component Number, Action Number, Parameters

Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Maestro® Tap Switch	6	Press, Release, Double Tap, Hold

Action Numbers and Parameters:

Action	Action Number	Parameters
Press	3	None
Release	4	None
Hold	5	None
Double Tap	6	None

Example OUTPUT Commands

Examples presume dimmer has been assigned Integration ID 2.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	*#DEVICE,2,1,3,*<CR><LF>

NOTES

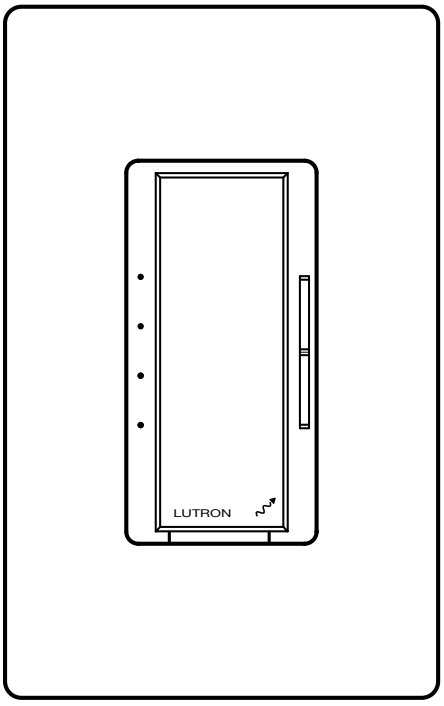
1. Only supported in HomeWorks® QS 4.0 or higher.

Maestro® Fan Speed Control

RadioRA® 2 Models (RRD-): 2ANF

HomeWorks® QS Models (HQRD-, HQRA-, HWD-, HWA-): 2ANF

2ANF



Why Integrate with a Maestro® Dimmer or Plug-In Module?

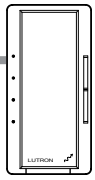
- Turn On to specific speed (High, Medium-High, Medium, Low or Off)
- Raise/Lower fan speed
- Query current speed

Additional Commands

- None

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
RadioRA® 2 Fan Speed Control			✓		
HomeWorks® QS Fan Speed Control				✓	



Maestro® Fan Speed Control: OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*

#OUTPUT[1], 1, Action Number, Parameters

Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Set or Get Zone Level	1	Levels : 0 = Off 1–25% = Low 26–50% = Medium 56–75% = Medium High 76–100% = High

Example OUTPUT Commands

Examples presume dimmer has been assigned Integration ID 1.

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set fan speed to Medium High.	*#OUTPUT,1,1,75*<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	*?OUTPUT,1,1*<CR><LF>
Response[3]: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to High.	*~OUTPUT,1,1,100.00*<CR><LF>

NOTES

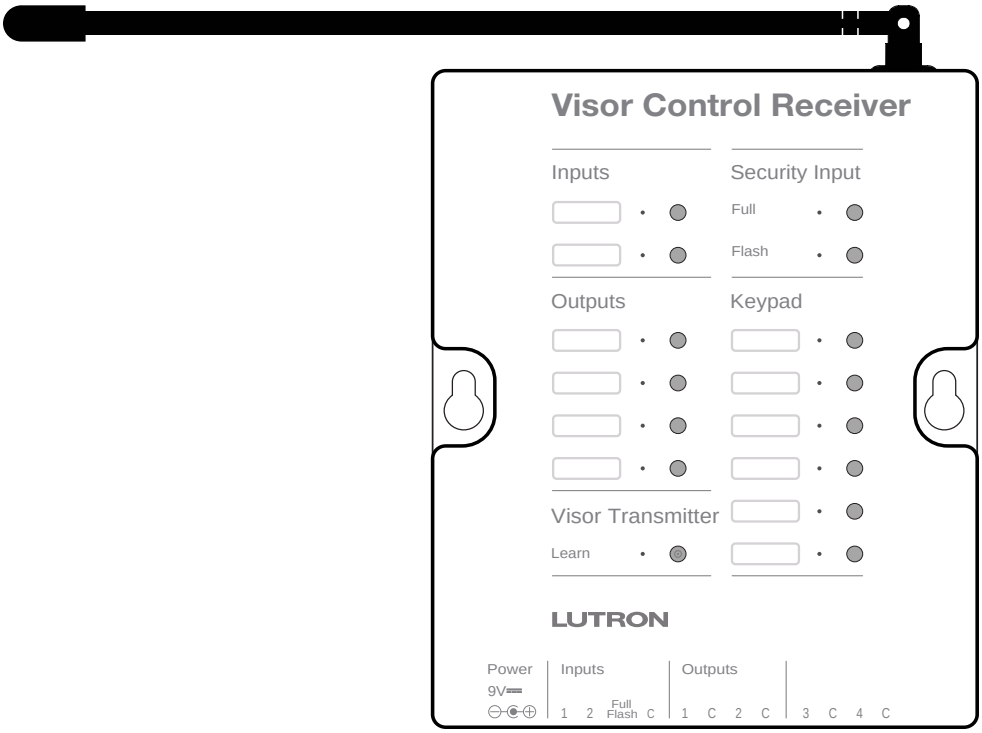
1. Only supported in HomeWorks® QS 4.0 or higher and RadioRA® 2 6.0 or higher.

Visor Control Receiver

RadioRA® 2 Model: RR-VCRX

HomeWorks® QS Model: HQR-VCRX

RR-VCRX



Why Integrate with a Visor Control Receiver?

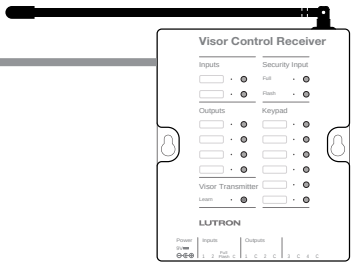
- Simulate a keypad press or contact closure inputs
- Control LEDs of unprogrammed buttons
- Control contact closure outputs

Additional Commands

- None

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
Visor Control Receiver			✓	✓	



Visor Control Receiver:
DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*

#DEVICE, 5, Component Number, Action Number, Parameters

Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

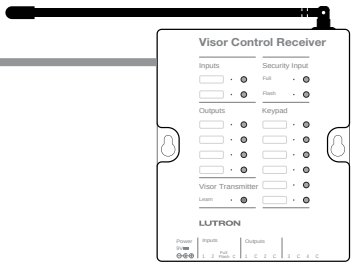
DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Scene 1	1	Press, Release
Scene 2	2	Press, Release
Scene 3	3	Press, Release
Scene 4	4	Press, Release
Scene 5	5	Press, Release
Scene 6	6	Press, Release
Full/Security	30	Open Input, Close Input
Security Flash	31	Open Input, Close Input
Input 1	32	Open Input, Close Input
Input 2	33	Open Input, Close Input
LED Scene 1	81	Set or Get LED state
LED Scene 2	82	Set or Get LED state
LED Scene 3	83	Set or Get LED state
LED Scene 4	84	Set or Get LED state
LED Scene 5	85	Set or Get LED state
LED Scene 6	86	Set or Get LED state

Action Numbers and Parameters:

Action	Action Number	Parameters
Press, Close Input	3	None
Release, Open Input	4	None
Set (#) or Get (?) LED State **NOTE:** *Valid for Scene LEDs only*	9	0 = Off 1 = On

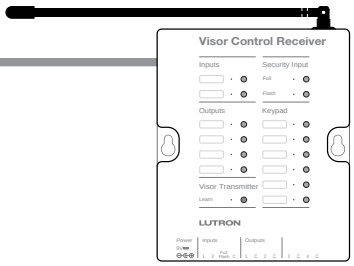


Visor Control Receiver:
DEVICE Commands *(continued)*

Example DEVICE Commands

Examples presume Visor Control Receiver has been assigned Integration ID 5.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Scene 1.	*#DEVICE,5,1,3*<CR><LF>
Turn On Scene 1 LED.	*#DEVICE,5,9,81,1*<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	*?DEVICE,5,9,81*<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	*~DEVICE,5,9,81,1*<CR><LF>



Visor Control Receiver:
OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*

#OUTPUT,21, Action Number, Parameters

Command *Action number is always 1 for visor control outputs* *Use "OUTPUT Command-specific fields" tables to complete the parameter field.*

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Query (?) Output State	1	Level[1] = 0–100 or 0.00–100.00,
Set Pulse CCO (#)	6	Pulse[2] time in: SS.ss[4], SS, MM:SS, or HH:MM:SS, or Delay[3] in: SS.ss[4], SS, MM:SS, or HH:MM:SS

Example OUTPUT Messages

Examples presume CCO has been assigned Integration ID 21.

Operation	Command String
Set: #OUTPUT, Integration ID, Action Number, Parameters	
Set output to open.	*#OUTPUT,21,1,0*<CR><LF>
Set output to close.	*#OUTPUT,21,1,1*<CR><LF>
Query[5]: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	*?OUTPUT,21,1*<CR><LF>
Response[6]: ~OUTPUT, Integration ID, Action Number	
Output state is closed.	*~OUTPUT,21,1,100.00*<CR><LF>

NOTES

1. Any level greater than 0 will close the output. When level is equal to 0 the output will open.
2. The default time is one second.
3. The Fade and Delay time are optional. When not used the system will use a one second fade time with zero second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours. For shade outputs, the Fade parameter has no effect (since shades have fixed speeds) but it is required when specifying an optional delay.
4. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.45 seconds a value of 1.25 seconds will be used.
5. Momentary outputs should not be queried.
6. The system will report the target level of outputs. Any level greater than 0 means that the output is closed.

Radio Powr Savr™ Sensors

CURRENT

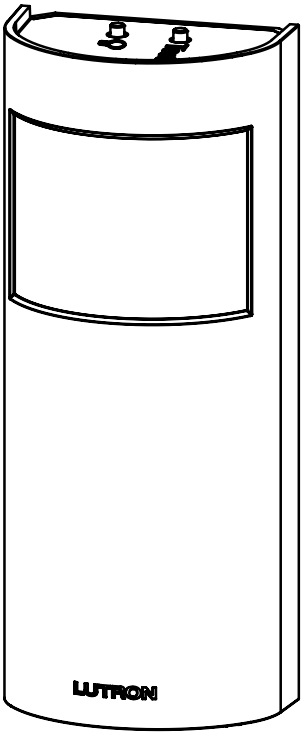
Models (LRF2-, CCD-): OCR2B, VCR2B, OKLB, OHLB, OWLB, VKLB, VHLB, VWLB

LEGACY

Models (LRF2-): OCRB, VCRB

LRF2-OCR2B

LRF2-OKLB

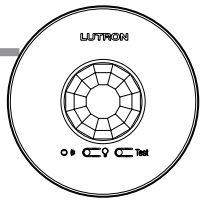


Why Integrate with a Radio Powr Savr™ sensor?

- Monitor occupied, unoccupied status of a single sensor

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
Radio Powr Savr™ Sensors			✓	✓	✓



Radio Powr Savr™: DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*

~DEVICE, 19, 2, Action Number

Command *Occupied state component is always 2 for sensors*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Occupied State	2	Occupied, Unoccupied

Action Numbers:

Action	Action Number
Occupied	3
Unoccupied	4

Example DEVICE Commands

Examples presume sensor has been assigned Integration ID 19.

Operation	Command String
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
Radio Powr Savr™ 19 went occupied.	*~DEVICE,19,2,3*<CR><LF>
Radio Powr Savr™ 19 went unoccupied.	*~DEVICE,19,2,4*<CR><LF>

HVAC Controller

MODELS (LR-): HVAC-1-WH, HWLV-HVAC

LR-HVAC-1-WH

LR-HWLV-HVAC

Why Integrate with a HVAC Controller?

- Get current temperature
- Set or get heat setpoints and cool setpoints
- Set or get operating mode, fan mode and eco mode
- Get connection status to the temp sensor
- Get schedule information and hold schedules

Supported Command Types

- HVAC allows control and monitoring of the HVAC Controller

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
HVAC Controller			✓	✓	

HVAC Controller: HVAC Commands

HVAC Command Format

Operation *Integration ID (example)*

#HVAC,21, Action Number, Parameters

Command *Action number is always 1 for visor control outputs* *Use "HVAC Command-specific fields" tables to complete the parameter field.*

HVAC Command-specific fields

Action Numbers and **Parameters:**

Action	Action Number	Parameters
Get (?) Current Temperature (°F)	1	Temperature = 40–100 °F
Set (#) or Get (?) Heat and Cool Setpoints (°F)	2	Heat Setpoint = 40–103 °F Cool Setpoint = 50–113 °F
Set (#) or Get (?) Operating Mode	3	Mode (1 = Off, 2 = Heat, 3 = Cool, 4 = Auto, 5 = Em.Heat)
Set (#) or Get (?) Fan Mode	4	Mode (1 = Auto, 2 = On)
Set (#) or Get (?) Eco (Setback) Mode	5	Mode (1 = Off, 2 = On)
Get (?) Eco Offset	6	Eco Offset = 1–11
Set (#) or Get (?) Schedule Status*	7	0 = Schedule Unavailable (Get "?" only) 1 = Following Schedule (Set "#" or Get "?") 2 = Permanent Hold (Set "#" or Get "?") 3 = Temporary Hold (Get "?" only)
Get (?) Temperature Sensor Connection Status	8	1 = All sensors are active 2 = Missing Sensor 3 = Wired Sensor Only 4 = No Sensor
Get (?) Schedule Event	9	Schedule # (1–7), Event # (1–4), HH,MM, SPH, SPC
Get (?) Schedule-Day Assignment	10	Schedule#(1–7), DD(Bitmap:Sunday(Bit 0)–Saturday(Bit 6) 1–active day, 0–inactive day)
Get (?) System Mode	11	1 = Normal 2 = Away 3 = Green
Set (#) Emergency Heat Available	13	1 = Not Available 2 = Available
Get (?) Call Status	14	0 = None, Last was Heat 1 = Heat Stage 1 2 = Heat Stage 1 and 2 3 = Heat Stage 1, 2 and 3 4 = Heat Stage 3 5 = None, Last was Cool 6 = Cool Stage 1 7 = Cool Stage 1 and 2
Get (?) Current Temperature (°C)**	15	Temperature = 4–38 °C
Set (#) or Get (?) Heat and Cool Setpoints (°C)**	16	Heat Setpoint = 4–39 °C Cool Setpoint = 10–45 °C

Continued on next page...

NOTES

* Schedule Unavailable –> Schedule not programmed or device needs date/time.
Following Schedule –> Running programmed schedule; set points from schedule.
Permanent Hold –> Schedule is not running; set points as adjusted.
Temporary Hold –> Running schedule; set points as adjusted. Returns to following schedule at next schedule event.

** HomeWorks® QS software version 4.1 and higher.

HVAC Controller: HVAC Commands *(continued)*

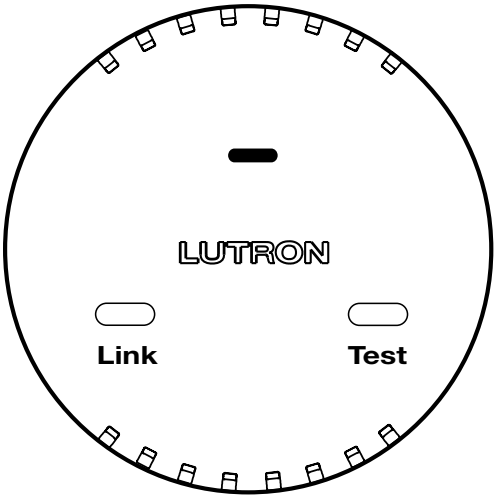
Example HVAC Commands

Operation	Command String
Execute: #HVAC, Integration ID, Action Number, Parameters	
Set Heat Setpoint to 68 °F and Cool Setpoint to 72 °F.	*#HVAC,1,2,68,72*<CR><LF>
Set System Mode to Cool.	*#HVAC,1,3,3*<CR><LF>
Turn Eco Mode On.	*#HVAC,1,5,2*<CR><LF>
Query: ?HVAC, Integration ID, Action Number	
What is the Current Temperature?	*?HVAC,1,1*<CR><LF>
What is are the settings for Schedule 1, Event 2?	*?HVAC,1,9,1,2*<CR><LF>
What days are running Schedule 1?	*?HVAC,1,10,1*<CR><LF>
Response: ~HVAC, Integration ID, Action Number, Parameters	
Current Temperature is 70° F.	*~HVAC,1,1,70*<CR><LF>
Schedule 1, Event 2 starts at 8:00am with SPH=65,SPC=78	*~HVAC,1,9,1,2,08,00,65,78*<CR><LF>
Schedule 1 is being run on Monday and Tuesday.	*~HVAC,1,10,1,06*<CR><LF>

Wireless Temperature Sensor

Model: LRF2-TWRB

LRF2-TWRB



Why Integrate with a Wireless Temperature Sensor?

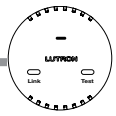
- Get battery status
  Note: To get current temperature, see HVAC Controller on page 132.

Additional Commands

- None

Compatibility

	QS Standalone	Quantum®	RadioRA® 2	HomeWorks® QS	Clear Connect® Gateway System
Wireless Temperature Sensor			✓	✓	



Wireless Temperature Sensor: DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*

?DEVICE, 1, Component Number, Action Number, Parameters

Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Battery Status	1	Get battery status

Action Numbers and Parameters:

Action	Action Number	Parameters
Get battery status	22	1 = Normal, 2 = Low

Example DEVICE Messages

Operation	Command String
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the Temperature Sensor's Battery Status?	*?DEVICE,1,1,22*<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
Temperature Sensor's Battery is Low.	*~DEVICE,1,1,22,2*<CR><LF>

Worldwide Technical and Sales Assistance

If you have questions concerning the installation or operation of this product, call Lutron® Technical Support Center.

Please provide the exact model number when calling. Model number can be found on the product packaging. Example: SZ-CI-PRG

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